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Audubon



magazine

MARCH-APRIL 1951

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CHARLES E. MOHR is director of the Audubon Nature Center at Greenwich, Connecticut, where sessions are held each summer for adults interested in nature and conservation. A leading educator in the nature field, he is past president of the American Nature Study Society and president of the National Speleological Society. His articles and wildlife photographs have appeared in a number of national magazines.



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Volume 53 Number 2

Formerly BIRD-LORE

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COVER: Photograph of eastern phoebe by Allan D. Cruickshank. Had the gentle phoebe no wide claim upon our affections, it would be famed for having been the subject of the first bird-banding experiment in America. In April 1804, Audubon found a pair of phoebes nesting in a cave near Norristown, Pennsylvania. He fixed a silver thread around the legs of the young ones and a year later caught several phoebes on their nests not far from where he had banded the young ones the year before. Two of them had a ring of silver thread around their legs. For the first time in America, he had proved that the young of migratory birds return to their home region, if not to their exact birthplace.

• • •
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AUDUBON MAGAZINE is published bimonthly by the National Audubon Society. Subscription \$2.50 per year in U. S., its possessions and Canada; 2 yrs.—\$4.50; 3 yrs.—\$6.00; Foreign, 1 yr.—\$2.75.

AUDUBON MAGAZINE regrets that it cannot continue subscriptions beyond date of expiration. Checks and money orders should be made payable

to AUDUBON MAGAZINE. Editorial and advertising office, 1000 Fifth Avenue, New York 28, N. Y. Reentered as second-class matter April 29, 1942 at the Post Office at New York, N. Y., under the Act of March 3, 1879. Copyright, 1951 by the National Audubon Society. Postmaster: If undeliverable, please notify Audubon Magazine on form 3578 at 1000 Fifth Avenue, N. Y. 28, N. Y.

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Letters

Hawk-Killing in Connecticut

Recently I visited a Connecticut taxidermist's shop. I was surprised to see on the shelves and behind glass a large number of hawks.

Inquiry showed that all of these hawks were killed for sport. Connecticut protects none except the osprey. Most of the hawks in the shop were mouse-destroying buteos, which make such an easy target for even the greenest of gunners. While I was there a proud gunner dropped in to claim the red-tail which he had killed for "the fun of it."

It is amazing that a state like Connecticut should make no effort to protect its hawks, especially the buteos, which are the friends of the farmer and destroy such quantities of rodents. A deer, a partridge or a duck can at least be eaten after it is dead. A red-tailed or red-shouldered hawk, friends of man and creatures of rare beauty, are killed solely for "fun."

When will Connecticut and other states stop this kind of "fun"?

REV. ROBERT HATCH

St. John's Parish
Waterbury, Connecticut

(EDITORS' NOTE: In those states which protect most or all of the birds of prey, the laws have been put across by individuals and organizations vitally interested in bird protection. We suggest that Rev. Hatch, and those who feel as he does, start a program in their respective states for better protection of the hawks and owls. According to our information, the following states do not protect any of the hawks and owls: Alabama, Arkansas, Georgia, Idaho, New Mexico, Virginia, Maine, Maryland, Michigan, Nevada, New Hampshire, and Oklahoma. Many other states have insufficient protective laws that need improvement.

This Society does not believe that birds should be classified as "good" or "bad." Each native species performs an important function as a member of the wildlife community. For this reason it is to be hoped that eventually state laws can be secured which will protect all hawks and owls, with the exception that individuals may be destroyed if caught in the act of doing damage to property.

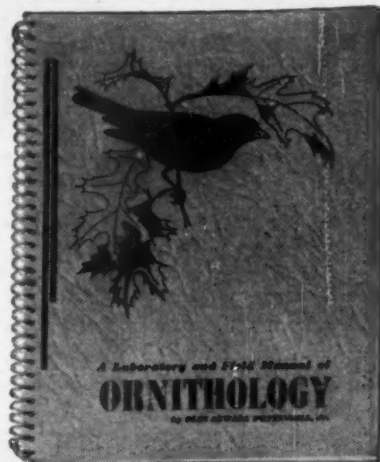
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present bird protection laws are not repealed or weakened. As an example of such an attempt, a bill was recently introduced in the New York Legislature to repeal the protection for the snowy owl which was approved during the 1950 session.

A survey of present state laws relating to the birds of prey ("A Fair Deal for Our Birds of Prey?" 5¢) is available from this Society.

Plight of Florida Bald Eagle Worsens

Nesting is late this year and in my four-day trip I banded only four birds, the first for this year. Also, many birds are not nesting.

In the 80 miles from Tampa to Englewood, I checked on some 30 nests and only two of them were active. The situation looks very bad. Last year I could band only 25 birds and this year I will do well to band 22.

Note how my banding is falling off and I am covering just as much territory as ever:

1946—150 birds	1949— 60
1947—113	1950— 25
1948— 85	1951— possibly not over 22

Continued on Page 136

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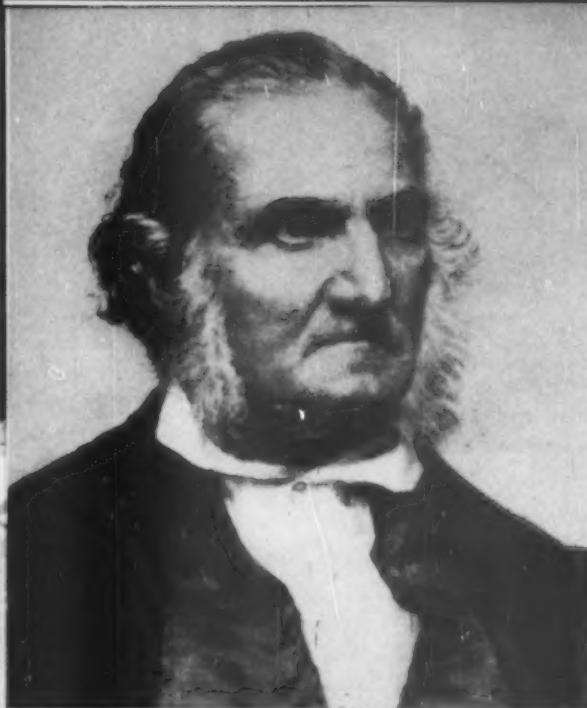
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John James Audubon from a daguerreotype by Brady taken about 1848 or 1849.

Audubon and Bachman*

NATURALIST AND

By Alexander Sprunt, Jr.

ON a fall day 120 years ago, John Bachman and John James Audubon met for the first time, in Charleston, South Carolina. John Bachman was grave, methodical and deliberate; Audubon impulsive, hot-tempered and hasty. The friendship then begun and strengthened through the years has made a deep and lasting impression upon American natural science.

Bachman, the Lutheran minister, had heard of Audubon, but Audubon was unaware of Bachman's existence until that day in 1831. Audubon had come to Charleston with a letter of

introduction to Rev. Mr. Gilman, which he delivered and, in company with that gentleman, was walking on the street when they met Dr. Bachman. Gilman presented Bachman to Audubon. Liking, understanding and attraction between the two men was immediate. Audubon's own words regarding it cannot be improved upon. Writing to his wife just after that meeting he said:

"Mr. Bachman!! Why, my Lucy, Mr. Bachman would have us *all* stay to his house—he would have us make free there as if we were at our own encampment at the head of Some unknown Rivers—he would not suffer us to proceed farther South for 3 weeks—he talked—he looked as if his heart had been purposely made of the most

* Co-authors of "The Viviparous Quadrupeds of North America." Two volumes of 150 lithographic, colored plates published by J. J. Audubon, New York, 1845-1846.



John Bachman from a portrait by Cleve Hite. Courtesy St. John's Lutheran Church, Charleston, South Carolina.



St. John's Lutheran Church, photographed by the author, was Dr. John Bachman's charge for 60 years.

CLERGYMAN

benevolent materials granted man by the Creator to render all about him most happy—Could I refuse his kind invitation? No!—It would have pained him as much as if grossly insulted. We removed to his house . . . found a room already arranged for Henry (Ward) to skin our Birds—another for me & Lehman to Draw and a third for thy Husband to rest his bones in on an excellent bed! . . . This my Dearest Friend is the situation of thy husband at Charleston South Carolina.”

The Lutheran divine, on the other hand, was no less enthusiastic regarding his distinguished guest. After Audubon and his party had departed from this first visit, Bachman wrote to Lucy Bakewell Audubon as follows:

“Your husband has convinced me

that I was but a novice in the study and besides receiving many lessons from him in Ornithology, he taught me how much can be accomplished by a single individual who will unite enthusiasm with industry.”

And so began that historical and memorable association which continued unabated until Audubon's death, 20 years later. Characteristically, Bachman underrated his own scientific ability in the letter to Mrs. Audubon. He had been interested in the natural sciences since boyhood, just as Audubon had, but had not confined this interest as much to birds. In his theological pursuits he was continually impressed with the wonders of nature and its Creator, one possessing about as much fascination for him as the

other. He himself said, "The works of God, amidst the wonders of nature, are always worthy of investigation."

Audubon's interest in nature appears to have been inherent, but Bachman's came from the family slave! This Negro, whose name was George, according to Bachman, not only started him in the study of nature but helped him obtain money secretly, to buy natural science books.

When, in 1831, Audubon came to Charleston, Bachman's interest in nature was keen, but there is no doubt whatever that his association with Audubon stimulated Bachman's interest in birds tremendously. Fired by his visitor's knowledge and enthusiasm, Bachman haunted the Carolina Low Country woods in Audubon's com-

pany and after Audubon's departure. In the year 1833, Bachman, in his field work, discovered two birds new to science, both warblers, which were described and named by Audubon. Audubon named one of them *bachmani*, after its discoverer, the other he designated *swainsonii*, for the noted English zoologist, William Swainson, with whom Audubon had developed a warm friendship in England. Thus were Bachman's and Swainson's warblers added to the list of known North American birds.

The history of these two birds is hardly less interesting than that of the men who discovered and described them. Both birds are indelibly associated with South Carolina and the parallelism which exists between them

Swainson's warbler, discovered by Bachman in 1833 and named by Audubon, was not seen again by ornithologists for 51 years. Photograph by Samuel A. Grimes.



is unique. After their discovery by the minister-ornithologist, they disappeared completely from scientific ken for over half a century! Fifty-one years later (1884) virtually in the same area where Bachman had found the warblers, Arthur Wayne, famed South Carolina ornithologist, rediscovered the Swainson's warbler and 68 years later (1901) he rediscovered Bachman's warbler. This bird remains what is generally considered this country's rarest passerine bird, or at least, the most unpredictable and least known member of its family. Bachman's warbler disappeared again after Wayne found it, and for years he searched for it without success. Its subsequent history has been one of disappearances and rediscovery, varying from a few years to as much as a generation!

Two other birds—Bachman's sparrow and Macgillivray's seaside sparrow—were made known to science by Bachman. Audubon, to whom Bachman sent the specimens for description, named one for his American friend, the other for William Macgillivray, the Scotch naturalist who as-



Swainson's warbler habitat in South Carolina cypress swamp photographed by the author.

sisted Audubon with the technical accounts of many species of birds in his "Ornithological Biography."

Audubon himself, while in and about Charleston, and afield with his devoted companion, secured two previously undescribed species of birds, the king rail and rough-winged swallow. Their joint endeavors therefore, produced a half-dozen birds hitherto unknown to scientists.

Although in their boyhood days both Audubon and Bachman were

Nest and eggs of Swainson's warbler in Duval County, Florida, photographed by Samuel A. Grimes.



A cypress "backwater" in South Carolina where Audubon and Bachman collected birds. Photograph by the author.





interested in nature, it is evident that this interest was secondary to Bachman who apparently made an early decision to enter the ministry and prepared for it by entering Williams College, in Massachusetts, from his home in Rhinebeck, New York. Ill health dogged him constantly and a serious lung ailment forced him to abandon college. Still determined to become a clergyman, he studied theology near Philadelphia, Pennsylvania under private tutors, who were Lutheran ministers. Through their effective teaching he gained his license to preach, and his first charge, in the year 1813, was that of three churches near his home at Rhinebeck, New York.

Again ill health temporarily forced him to give up his clergyman's duties and travel to the West Indies for treatment and recuperation. On his return he found that he had been appointed by his church officials to serve St. John's Church in Charleston, South Carolina. Showing the effect of his illness, he journeyed there and was received by Colonel Jacob Sass, the president of the congregation, an ancestor of Herbert Ravenel Sass, a nature writer, who is a contributing editor of *Audubon Magazine*.

The Colonel had an immediate prescription for the fragile-looking leader of St. John's flock. "You must," he said, "live much in the open air and ride on horseback." As a result of the Colonel's advice and the salubrious Charleston climate, Bachman was at St. John's more than 60 years!

John Bachman had been in Charles-

ton about 15 years when he met John Audubon in 1831. From that time on, each was in the thought of the other until death ended the long and enduring friendship between these men.

Apart from his valuable contributions to scientific knowledge, it seems certain that Bachman's influence upon Audubon was one of his greatest human achievements and was of inestimable service to the American Woodsman. It is futile, of course, to envision what would have transpired without it, but that the kindly, corrective spirit of John Bachman had an immense effect on the general subsequent impact of Audubon on American history, can no more be doubted than can be the course of the earth around the sun. No one man had any more to do with John Audubon's rise to fame than John Bachman.

Without Bachman's staunch friendship, Audubon would have suffered much; attacks upon his ability, veracity and general reputation would have had far greater weight and success, whether merited or not. Ever coming to Audubon's defense, privately and publicly, the faithful Lutheran minister was a rock on which the surf of criticism, jealousy and personal dislike of the impetuous Frenchman, broke. From what embarrassing and dangerous situations Audubon was saved by Bachman's constant advice and admonition, no one will ever know. That such would have arisen seems certain, as Audubon's volcanic character continually led him into trouble with one or another of his contemporaries. A case in point is the historic controversy regarding his plate of the mockingbird which depicts the bird endeavoring to drive off a rattlesnake from its nest in a tree. Not only was the tree-climbing rattlesnake the subject of ridicule on

← Woods road on Fairlawn plantation where Bachman found the warbler named for him and Arthur Wayne rediscovered it. Bachman's warbler has been seen here annually for the past four years. Photograph by the author.

the part of Audubon's archenemy George Ord, but Ord was joined in his attempts to discredit the artist by Charles Waterton, an English naturalist, who declared that the shape of the rattlesnake's fangs, as depicted by Audubon, was erroneous. Into this wordy battle John Bachman came to Audubon's defense. Without upholding Audubon's illustration that infers that rattlesnakes can climb trees, or that the recurvature of the fangs of Audubon's specimen was incorrect (Audubon's drawing of the Florida rattlesnake's recurved teeth was correct*), the clergyman-naturalist delivered a blast at Waterton which, critical of the Englishman's incredible published stories, succeeded in silencing him. Bachman wrote:

"Audubon has been rudely assailed about a 'snake story,' but Waterton has given us several stories that fairly fill us with wonder and dismay. Instead of a contemptible rattlesnake, as thick as a man's arm, he tells us of a great 'Boa' which he encountered in his den. Dashing headlong on the Boa, he pierced him with his lance and tying up his mouth carried him as a trophy to the British Museum. The snake was so large that it took three men to carry it, and so heavy that they had to rest ten times.

"He gives another snake story—a snake ten feet long. Waterton was alone. He seized him by the tail, the snake turned around and came after him with open mouth, seeming to say, 'What business have you to meddle with my tail!' In this emergency, he put his fist in his hat, and rammed it down the snake's throat. Suffering the snake to wind itself around his body, he walked home in triumph . . . I am somewhat indifferent with regard to

Mr. Waterton and his marvelous book; but it is well for the public to know who this champion of truth is, that comes to accuse the American Ornithologist of exaggeration."*

Herein is proof that one of Bachman's greatest services to Audubon was defense of his friend, as well as a determination to guard the accuracy of the study of natural history to which he and Audubon were so devoted. His careful and methodical mind ever went more slowly than that of the impulsive Audubon. That the conclusions and pronouncements of Audubon had the benefit of analytical judgment such as Bachman possessed, was an asset for which Audubon must have been thankful many times.

The mutual aid and understanding between Bachman and Audubon was accompanied by an even closer tie. Good friends though they were, their friendship was deepened by the relationship of their children. Audubon's sons, John Woodhouse and Victor, married Maria and Eliza, daughters of Bachman. Bachman's second wife, Maria Martin, sister of his first, was an accomplished artist, and painted the backgrounds for some of Audubon's birds.

Audubon's rough and ready way of life, picked up on his many travels and amid crude surroundings in which he often found himself, together with his indifference to religion, must have caused the gentle clergyman distress. Indeed, something of Bachman's solicitude for his friend's good is reflected in his attempt to curb the profanity indulged in by Audubon, of which Stanley Arthur in his Audubon biography** says that, on his Florida expedition, Audubon used language

*"Defence of Audubon," by John Bachman, *Bucks County Intelligencer*, 1835.

* See page 80, Vol. II, "Audubon the Naturalist," by Francis H. Herrick, D. Appleton & Company, New York, 1917.

**"Audubon; Intimate Life of the American Woodsman," by Stanley Clisby Arthur, published by Harmonson, New Orleans, 1937.

which was "usually the envy of the gruff seamen who manned the boats." Again, says Arthur, "When Audubon informed (Henry) Ward that he . . . was out of a job, he did it with a wealth of expletives that shocked Doctor Bachman."

Their long jaunts together in the Low Country resulted in Bachman bestowing a nickname on Audubon which he constantly used later. The lumbering and uncomfortable conveyances of that time, the rutted roads and, in some cases, roadless areas which they penetrated, produced many a bump and jolt. Audubon, now and then, complained bitterly about being jostled, and probably profanely. Whereupon, Bachman thenceforth called Audubon, "Old Jostle."

After Audubon's departure from Charleston on one occasion, Bachman wrote him as follows, deploring "Old Mr. Jostle's" habit of taking the Lord's name in vain.

"I want to see you once more to ascertain whether you have stuck to your resolution never to swear (which is a vulgar practice for one who is conversant with the most beautiful of God's works—the feathered race), and never to work on Sundays."

Evidently, Audubon had endeavored to overcome his habit of swearing, and obviously had failed for, in his reply, he stated that he had made "another resolution to that effect!" Whether he eventually succeeded during their long friendship is not clear.

On the other hand Audubon was instrumental in leading Bachman into the habit of using snuff. Although Audubon had resolved time and again to forego the weed, he appeared unable to resist it, and introduced Bachman to its pleasures.

The complete understanding and companionship existing between

Bachman and Audubon sometimes resulted in comments on their appearance. Audubon's disregard of the amenities in this respect caused him, at times, to present a startling picture. His appearance was never lost upon the genial Bachman who, after one of Audubon's visits, wrote: "When you came your beard, two months old, was as gray as a Badger's. I think a grizzly bear, forty-seven years old, would have claimed you as *par nobile fratum*."

Undoubtedly, Bachman and Audubon had much fun with each other.

Though many of Bachman's writings on nature dealt with birds, his great publishing venture with Audubon concerned mammals. Though not as well-known as "The Birds of America," which was Audubon's greatest work, "The Viviparous Quadrupeds of North America" by Audubon and Bachman is a scholarly treatise, deservedly known to every student of that branch of natural science, here and abroad. Every word of the text was written by John Bachman, while the plates were done by Audubon and his sons.* Though the title of the work plainly enough indicates its joint authorship, it does not yet seem to be generally known that the entire letterpress was the work of Bachman, the clergyman-naturalist.

Bachman's attitude toward his participation in this classic is characteristic of the man. He stated that he had "no pecuniary interest in this work, as I have cheerfully given my own labors without any other reward than the hope of having contributed something toward the advancement of the cause of Natural History in our country. I am, however, anxious that

Continued on Page 120

*Seventy-six of the original paintings for this two volume work were done by John James Audubon; seventy-four were painted by his sons John Woodhouse Audubon and Victor Gifford Audubon.



Drawings by Robert Seibert

By Ruth Thomas

OCTOBER's breath had touched the oaks, and the dry leaves scraped and rustled and pattered down. Time for brown thrashers to move south, yet two—Crip of the lame wing and Greta, once his mate—lingered in their summer home.

In that autumn of 1944, Crip was going on nine years old. On April 5, 1937, in his first or possibly his second nesting season, I had placed the metal band, 37-308978, on his left leg. It was in his fifth summer, 1940, that

the right wing had been broken; since its crooked healing he flew in hard strokes for no more than 70 or 80 yards. For the first two winters after the injury, he had stayed in the summer home, and then old instinct mastered caution. Twice the crippled thrasher had migrated, leaving in October; twice he had returned, in March, to the rose thicket on the hill in Arkansas.

Through the years, Crip had become a ward that I loved. Now in fancy I besought him, *Stay in your roses, stay with the enemies you know,*

rain and cold and ice, the owl in the dusk. Crip, there are dangers more in the journey, stay in the roses that have sheltered your nests!

Greta, the thrasher with a green ring above the metal band, had been Crip's mate for two seasons, but the past spring had paired with the thrasher known as "Red" (for the color of his identifying leg band) who claimed the territory adjoining Crip's. Since the late summer's separation

***Crip the old brown
thrasher waits out
the winter for***

***One more
Spring***

from Red, Greta had wandered carefree; now, in autumn, Crip's land was a pleasant place for idling, for waiting the fever that would tell her, *Go!*

Crip, the old thrasher treated Greta, his former mate, with indifference. They foraged in the same fence rows, spent many hours resting in the roses, and each evening, at a quarter of six o'clock, were in the cedar tree to sleep. In all this, there seemed little companionship; perching within a wing's length of one another, they might have been miles apart.

Greta left, I believe, on the night

of October 7. Crip had gone to the cedar at the usual time. At a little past six o'clock—when there was just light enough for me to see—Greta flew from the roses up to an oak and then down to the shallow pool. Standing by the water she twice raised and spread her wings in what seemed a nervous or excited gesture. In a curious, hurried flight, she returned to the roses. Next morning, no Greta. I must have seen her as she waited for the full dark's signal to fly up and away. Had she, I wondered, known all through the day that at nightfall she would leave for the winter home in the South? Or was there first reluctance to sleep, then irresolution, and finally courage that quickened to a wild joy in the daring? And Crip, alone in the cedar, did he know the moment of her going and stir with a restless wishing?

When October 15 came and Crip was still at home, I began to hope. It was past the time for leaving. Mornings were cold, and everywhere was the look of autumn—frowzy grass and fallen leaves, sumacs scarlet and the far hills veiled.

Crip was a mystery. What kept our thrasher in his thicket of roses? He could fly as well as in the two autumns that he had migrated. And we believed that instinct, not sober prudence, ordered a bird's life. Watching him, so still and fluffed, I asked myself if he lived again the weary miles of the last spring's travel, if he said to himself, "I am old and slow and lame, I shall stay in the roses with winter and wait for March."

Through Indian summer's placid weather, the hills mellowed from rust-green to tints of gold and deep burnt brown. And Crip passed one day like another, foraging, dozing in his thicket, sleeping at night in the cedar.

Surely he was staying. Then November, and on the first day—gray cold rain. Robins flew over in great flocks, blackbirds by the hundreds and hundreds. Even that late our thrasher might leave, and with some anxiety I went at twilight to the cedar. There in the old tree's heart was Crip, canopied and curtained by the feathery branches. He moved uneasily, twitched the drooping wing, and settled again to quiet.

All the years that Crip had lived on our hill, save only the summer his wing was hurt, he had slept in the cedar, but on the night of November 4, terror drove him out. It was 10:30 o'clock; we heard the alarm, first a mockingbird's frantic "chip-chip-chip!" then the thrasher's lower "kunnh! kunnh!" I snatched a flashlight and hurried out. Both birds had flown to the roses. I could hear the rustle of leaves as they moved; the mocker was silent, but Crip complained again with the mutter of "kunnh!"; white-throated sparrows in the hedge were cheeping. A screech owl might have brushed against the cedar's branches, or a cat or opossum climbed the old tree. No enemy could I see, and my two Scotties, running to and fro, found no trail.

From that night, Crip quit the cedar for the thicket of roses. November turned clear and warm, and for as long as the fair weather lasted, the canes were shelter enough. The old thrasher was thriving. Usually reluctant to fly except from tree to tree, or tree to ground, now he sometimes left the oak near the roses for a long straight flight to my north flower garden. In summer, the garden belonged to Red, now all the hill was Crip's. Most mornings he foraged in his own old territory and far down the hill to the south; now and then I

saw him in the tangles of a ravine across the highway. Noon, he was in the roses, drowsing, watching the times I took grain and chopped peanuts and choicer nutmeats to the feeding table. I stood aside while he came running over the dry brown leaves. With my eyes closed, I would have known the small patter of his feet.



In December, frost came and a skim of ice formed on the birds' pool. Then rain. The first week it fell for two days and two nights. On the third morning, Crip looked so miserable, huddling in the roses, that I placed a pile of peanuts well within the tangle. He made a clumsy way down through the canes, but for a long minute stood beside the food, not eating. His feathers were dark with wetness, the right wing was so heavy that it hung very low, and the right foot he held against his breast. *The aches of age and wet weather*, I thought. All that day, fog dripped from the trees. In the early dusk, Crip left the roses, fluttered across the lawn and slipped through the hedge. With the cedar not safe and the roses too scant a cover, he was going down the hill to sleep.

For the rest of the winter, that was

the rule of the crippled thrasher's life—the roses by day, a secret place at night. He was so visibly distressed the few evenings I tried to follow his journey down the hill that I forbore the spying; the one minute he lost in changing his course to elude me might have given an enemy the perfect strike. Never discovering the new sanctuary, I came to believe that it was in the dark ravine beyond the highway. Why did Crip go so far to a night's lodging? Cardinals slept in the clematis vines at our porch, white-throated sparrows and slate-colored juncos settled in the hedge and the tall grass at the fringe of the lawn. The old thrasher, crouching in the roses on November's moonlit nights, may have watched owls or four-footed hunters search that village of birds. Shrewd wisdom bade him seek a lonely retreat.

Many evenings, at work by a window, I watched Crip's going away. Never was he so cautious as in the hour the screech owl looked from his hollow tree. Sometimes our thrasher took a wary and circuitous route. Usually he fluttered across the lawn to the hedge and through it to the hillside, thence moving in hops over the sparse wild grass, picking a way be-

tween coarse tufts and drifts of leaves. Now he paused to hide in stillness; straining my eyes, I saw him resume the journey. In his progress there was a grim rein to haste, and there was also a smooth stealth. Pity for the old bird traveling afoot was like a hurt in my breast.

I hoped so hard for him. *Crip, keep safe in your night's shelter, watch well in the morning light! In March the oaks will swell their buds, thrashers will come up from the South, and you will know again a purpose and a sharing of your life.*

Winter in Arkansas gives extremes of weather. In January, there was a week of spring. Jasmine bloomed, daffodils hurried the growing of green spears, and the tiny Bewick's wren found his lost songs. Sun poured into the castle of the roses. Old Crip stretched his good wing and then the lame wing, stretched one leg and the other, and spread his tail; the warmth was good.

Blue jays felt the wine of spring and went screaming across the sky. Now they gathered in a tree to bounce on their legs and roll out the chant of "ee-la-la! ee-la-la!" Sometimes the jays shrieked alarm, and I am sure they saved birds' lives. One day Crip was at the table when there came a clamor of yells. Every bird "froze" or rushed to cover. Juncos and white-throated sparrows streaked to the roses, and Crip flew with them, driving his wings to a spurt of speed. For five minutes, no sound, no moving, and then a chickadee's prattle of "dee-dee-deel" broke the spell; the enemy I had not seen was gone.

In a quick forgetting, the juncos and white-throats scattered; titmice and chickadees, wrens and cardinals and woodpeckers returned to the



everyday needs of living. Not the old brown thrasher. For an hour Crip kept to the roses. At last he started over the ground to the table, but stopped every few steps in a tense alertness. Picking up the nutmeats he was still nervous; that was the only time I ever saw him bob on his legs and jerk his tail in the way of a Carolina wren.

Crip had more mind than most of the small birds of his world, and vastly greater experience. When the jays screamed their warning, instinct sent the other birds to hiding, and some may not have known from what they fled. To Crip, there may have flashed a scene many times witnessed — the hawk's dive from the sky, the lightning blow, the puff of feathers, the body borne away in the talons. That hour in the roses, his old heart must have beat fast with remembering.

February is often our bitterest month. That winter there was rain in drizzles and in floods, and finally there was a trial by ice. On the night of the 26th, with the temperature at freezing, rain fell for hours. Next morning we looked out to a glazed world and saw rain, mixed with sleet, still falling.

Crip's roses were at first in crystal, every cane with its own glassy covering; then cane froze to cane, and the sleet spread a crushing blanket. The thrasher stood on the ground in an ice-walled cavern. There he had some shelter, and every hour I tossed him grain and broken nuts. But his poor feet, all day on ice! There were beads of ice on his wings, I doubted he could fly, and if his toes froze, how would he go down the hill in the evening? And so I fretted, scraping table and shelves, chopping a clear place on the ground, taking out fresh supplies.

Many new birds had come in from the woods, there were fox sparrows and towhees and a sad hermit thrush. All the time, Crip was in my thoughts. *One more summer I wanted for him.*

In the house, I warmed my fingers, then watched the rain and the freezing of ice on ice. My gentled land—



the trees that I knew like friends, the roses and shrubs that I had planted and for many years tended. Now all were cruelly masked, weighed down and twisted to goblin shapes. The little birds that scrambled for food seemed not real in this arctic desolation. Ice storms we had had in other winters, but never one like this.

Dark would come early, and Crip must think of the night. For a long time he stood in the ice cave's entrance, looking at the frozen waste of land. Near by was a tool shed, the door open, and cardinals, juncos and white-throats would take shelter beneath its roof this bitter night, but Crip's way was the lone way. With a flutter of heavy wings he was across to the hedge and through it. Down the hill he went in slow and careful hops, over the ice-crusting grass and leaves.

More rain in the night, and next morning the roses were crushed to the ground. There was no longer a cavern for our thrasher. There was no Crip! It was a fantastic land, all ice, yet I searched the hilltop. *The ravine*, I thought, *he might be there!* But the path was steep and slippery, the oaks' stoutest limbs were cracking, and my courage failed. Crip, if he lived, would come home; he would seek in his desperate need the familiar plenty of the table.

With freakish quickness, the weather warmed. By noon, the thaw had set in and oh, the dreary world—the gray sky and everywhere the dripping, the clatter of breaking ice—the groaning and rending and splitting of the trees. There was danger from the crashes, yet again and again I went to look in the ruin of the roses; I walked the length of the hedge, peered in the old cedar's bedraggled branches. At last, the thin gray dusk. I remember the Scotties following at my heels, troubled because I was troubled. I went to the roses, to the hedge, to the cedar.

Looking back to the morning of March 1, 1945, it seems like a scene in a play. By the country's war clock, it was 7:30, the time I made the coffee and from the kitchen window watched the birds' first gathering. By the sun's time it was 6:30, the hour that dark gave way to dawn. In the first pale light, Crip, our thrasher with the stiff wing, stepped through the hedge and marched across the lawn to the roses! Even now I can see him, the way he leaned forward in urgent haste. *Crip was hungry!* Later I would reason that he had stayed in the ravine, or wherever he had found refuge, rather than struggle through the ice or the thawing to the top of the hill. But

then I did not wonder or question. In a rush of love and thankfulness, I went out to him with whole pecan kernels.

Within a week, spring's miracle came. Forsythia's branches were gold with bloom and the blackberries of the fields and the hawthorns away in the woods spread leaves of tenderest green. The March winds were warm, and on the morning of the 8th, Crip's neighbor, Red, came home.

Hearing earnest thrasher songs, I went to see if it was Crip who opened the season so early. The thrasher in my garden white oak had his wings neat against his body, and on the right leg two bands, red above aluminium. Red wasn't, like the old thrasher, a piece of my heart, but we were friends with much to remember.

Crip, in the roses, was still and listening. Perhaps the neighbor's voice woke memories, and new desires be-



gan to grow. Moving to a higher cane, he whispered songs. Mid-morning, and Crip had mounted to the topmost twig of an oak. For several minutes he scanned the country, and then he sang, in serious, deliberate phrases, that he owned the rose territory and held it for the coming of a mate.



Royal walnut moth
photographed by
Walter S. Chansler.

RARE INSECTS

Insect photographs courtesy of Smithsonian Institution, unless otherwise noted.

"In nearly 50 years of collecting insects, I have seen only one living royal walnut moth . . ."

By Cyril E. Abbott

WHEN one has studied and collected insects for many years he begins to realize that not all kinds of insects are equally common. Some, indeed, are so rare that even the collector is fortunate if he finds them once in his lifetime. True, a relatively common species may seem rare sim-

The leaves of hickory trees are fed upon by the caterpillar of the royal walnut moth, known as the hickory horned devil. Tree photograph by Allan D. Cruickshank, caterpillar by Lee Jenkins.



ply because one does not know where to look for it, but when a trained observer fails to find it, it is certainly not a common species. When numerous naturalists, combing the country for insects, find that a species has been

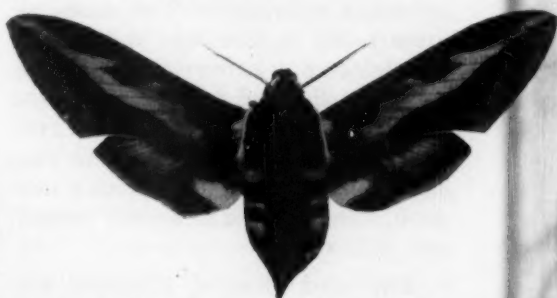
found only occasionally, that species may, indeed, be considered rare.

The royal walnut moth, *Citheronia regalis*, for example, is widely distributed in the United States east of the Rocky Mountains, from the Gulf of Mexico to Labrador. The caterpillar, or larval form of this moth, feeds chiefly upon the leaves of hickory trees, which are certainly not uncommon plants. The caterpillar, known as the hickory horned devil, does not get competition from other insects, since those that do feed on hickory are seldom found in large numbers. Yet despite all this, it is a fortunate person who ever sees either the adult royal walnut moth or its caterpillar. Nowhere in the region which it in-

habits is this insect found in great numbers. In nearly 50 years of collecting and studying insects I have seen *one adult living specimen and one caterpillar*. The latter, which I hoped to bring to maturity, died during transformation.

The royal walnut moth is a handsome creature with a wingspread of four or five inches. The forewings are steel blue with red "veins"; the hind wings a soft brown. There are large patches of yellow irregularly distributed on all of the wings. The sexes are quite similar, excepting that the male is somewhat smaller than the female and is usually darker. The caterpillar is quite as conspicuous as the

The fireweed hawkmoth (right) is very rare, even though fireweed (below), on which its larvae feeds, is an abundant and widely distributed plant. Photograph of fireweed by H. E. Stork.



moth itself; for in addition to being four or five inches in length and as thick as a man's thumb, it bears on the upper, forepart of its body several pairs of curved horns, which give it its common name. Despite its fearsome appearance, it is quite harmless.

Rarity is not, however, invariably associated with large size and striking appearance. In proof of this we have *Merope tuber*, a relative of the scorpion-flies, a creature at once so rare and so inconspicuous that it has no common English name. It is nondescript in color, it is small with a wingspread of about an inch and it is without any particular peculiarity excepting that the male bears at the "tail" end of his body a pair of "forceps."



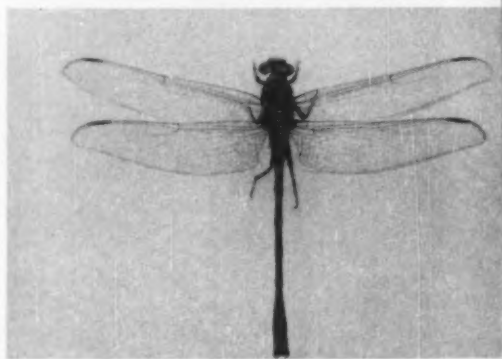
Merope tuber has the singular distinction of being the *only* representative of its genus and of its family, Meropeidae, in our country. Its life history is unknown. Presumably the immature insect resembles a caterpillar, for this creature belongs to the order Mecoptera to which the scorpion-flies belong and the young scorpion-fly is very much like a caterpillar.

None of the Mecoptera are very common. Twice in my life I have come upon little groups of adult scorpion-flies. Both times the species were different. Yet all scorpion-flies are very much alike. Their wings, similar in size and shape, are straw-colored with brown blotches, giving them a rather attractive appearance. The males are remarkable in that the "tail," really the abdomen, is narrowed and then enlarged at the end to form a bulbous part armed with a pair of "pincers." Thus the body of the creature does bear a singular resemblance to a scorpion, to which it is in no way related, nor is it a fly.

The black dragon, *Hagenius brevistylus*, is a large dragonfly with colorless wings and a body beautifully marked with white streaks and spots. Although, technically, it is one of the "club-tails," it differs so markedly from all other dragonflies that it is not likely to be mistaken for any of them. Even its larva, which like all immature dragonflies is a wingless inhabitant of the water, grotesquely differs from other dragonfly babies. Once I saw an adult black dragon laying eggs. She hovered over a woodland pool at a height of six or eight inches. At intervals she dropped quickly to the surface of the water, her long abdomen held vertically. As the tip of her body touched the water, she flipped that portion of her anatomy

forward with such force that drops of liquid were thrown several inches into the air. Presumably each time she did this she dropped eggs into the pool. While the black dragon is not as uncommon as some other insects, seldom will more than one or two be found in one place at one time. This is remarkable when one considers that there is scarcely another species of dragonfly in our country which does not occasionally appear in enormous numbers.

In the past so much publicity has been given to the royal walnut moth that some people believe that it is the only moth which is rare. Yet another equally conspicuous moth which seems to give the royal walnut moth strong competition in that respect, is the fireweed hawkmoth, *Celerio intermedia*. This belongs to that group of moths with elongated, vibrating wings that are sometimes mistaken for hummingbirds. The fireweed hawkmoth must be very rare. Few of my fellow-collectors have ever seen one alive and just once I saw a living specimen that was attracted to a light on a house porch. The strangest thing about this insect's rarity is that



Although the black dragonfly is not as uncommon as some other insects, it is considered a rare species.

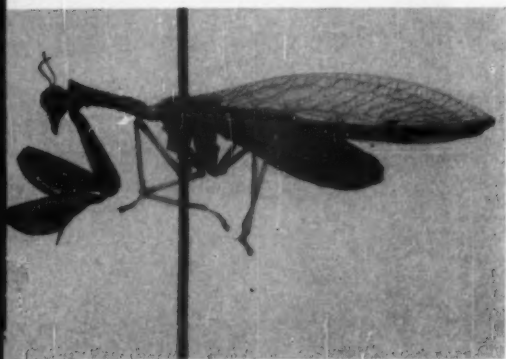
the closely related lined hawkmoth, *Celerio lineata*, is very common indeed. One could easily collect a dozen specimens of the lined hawkmoth in an hour at a petunia bed, providing he had a net. Certainly the fireweed hawkmoth is not overlooked by entomologists. It has a wingspread of at least three inches with a conspicuous pattern of pink and black. Nor can its rarity be blamed on a lack of proper food, since fireweed, *Epilobium angustifolium*, upon which the caterpillar feeds, is a very common plant occurring throughout the eastern United States and in Kansas, Arizona and California.

Perhaps the most interesting of all rare insects is *Mantispa*. The name represents a group rather than a single species—for there are several—but this need not concern us, since all are rare and all are pretty much alike in appearance and habits. *Mantispa* has no "common" name. It is sometimes mistaken for a praying mantis, which it remarkably resembles, although the latter insect has a different set of ancestors, being related to the grasshoppers, while *Mantispa* is cousin to the Dobson-fly, of which hellgram-

mites, the larval form, are a well-known fish bait.

We find here a remarkable example of what naturalists call "ecological convergence," the fact that two insects with different ancestors have come to resemble each other because of similarities in their methods of living. Both lie in wait for prey, which they seize with their powerful forelegs. There are a number of distinct differences, nevertheless, between mantids, or praying mantises, and mantispids. All mantispids are small, averaging less than an inch in length. Mantids, although some are small, vary greatly in size. The big Chinese mantis, *Paratenodera sinensis*, which has been established in our country, is four or five inches long. The wings of the mantispids are of the lace-winged type found in dobsons and dragonflies whereas the wings of the mantids are of the grasshopper type. Finally, the development of the two insects differs. The mantispids have a complete metamorphosis in which the young insect is unlike the adult in appearance, and passes through a sleeping, or pupal stage, before becoming adult. The young mantis, at hatching, resembles the adult except that it is smaller and has no wings, and it remains active throughout life. The mantispids are active hunters only as adults and the female lays her eggs upon spider or insect eggs which her emerging progeny devour.

The small size of mantispids may be the reason why they are not found more frequently, yet, that collectors of insects seldom find them makes it appear probable that they are relatively rare. The only mantispids I ever found was quite by accident when I discovered them in a field in Kansas in 1928.



Perhaps the most interesting of all rare insects is mantispida. It is sometimes mistaken for a praying mantis.

No one knows with certainty why some insects are rarer than others. It is difficult to find any *one* cause of rarity. Scarcity of a particular food suggests itself as a possible cause for the rarity of some insects, but it certainly cannot be true for all of them. Nor does competition for food explain the matter. The caterpillar of the royal walnut moth shares its diet of walnut or hickory leaves with a number of other insects which are not numerous enough, even when all of them are taken together, to seriously injure the trees upon which they feed. Therefore it can scarcely be true that the royal walnut moth is crowded out by other insects. The lined hawkmoth, it is true, has a wider choice of food plants than has the fireweed hawkmoth, yet, as we have noted, the food of the fireweed hawkmoth is certainly not in short supply. Predators and parasites seem to take no more toll of rare species than of commoner kinds. They should, in fact, have less effect for it is an established natural law that in order for a predator or parasite to survive, the creatures upon which it lives must be able to breed much more rapidly than the predator or parasite. It is improbable that rare animals breed very rapidly. Of course, we know little about the predators and parasites of rare animals because their very rarity makes it difficult to study the problem carefully and in detail. Rarity is more likely to result from low vitality and reproductive rate than from any other factor.

Without doubt some insects are rare because they have passed their historical prime. This may be the case with *Merope tuber*, as well as with the Mecoptera as a group. Many millions of years ago there existed a group of insects known as Megasecoptera. They have long since become extinct, but,

in the meantime, have given rise to the Diptera, or two-winged flies and to the Mecoptera. The two-winged flies, of which the mosquito and housefly are examples, are highly specialized, mod-

★ N A T U R E

Audubon Society Issues Centennial Stamp Set

A flamingo stalking along a mud flat, ivory-billed woodpeckers searching for grubs, and a snowy owl against a blue-black sky are a few of the dramatic subjects portrayed in the full-color Audubon Centennial Stamps recently issued by the National Audubon Society.

John H. Baker, president of the Society, says, "These beautiful miniatures of Audubon's most colorful paintings are published to commemorate the centenary of the famous naturalist's death in 1851. His bird portraits have never before been reproduced in stamp form."

The Audubon Society recommends that the Centennial Stamps, consisting of 24 miniatures to a set, be used to decorate letters, envelopes and packages in order that Audubon paintings will receive during the Centennial Year the public attention which they merit.

New York Herald Tribune photograph.



ern insects, very successful in maintaining themselves. The scorpion-flies, on the other hand, although they have become specialized in some respects, have, for the most part, retained an-

cestral structures and habits which are liabilities today. Perhaps they, too, will disappear as have many extinct forms of life that failed to adapt themselves to our ever-changing world.

I N T H E N E W S ★ ★

Proceeds from the sale of Audubon Stamps will be devoted to the conservation work of the National Audubon Society. They are being sold at the rate of two sets for one dollar and are available either from headquarters at 1000 Fifth Avenue, New York 28, N. Y., or from local Audubon organizations throughout the continent.

Mr. Baker states, "Audubon was one of the first Americans to express concern about the depletion of our native wildlife. He inspired the birth of the conservation movement in America. The first Audubon Society was organized in 1886. Its successor has grown to be one of the largest and most influential organizations dedicated to conservation of natural resources. Therefore, we take pride in issuing a set of Audubon Centennial Stamps as a tribute to the great naturalist's life and work."



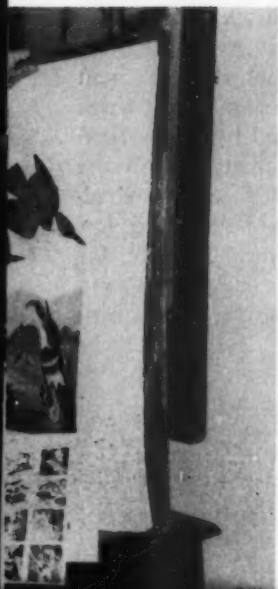
Photograph by F. Clyde Wilkinson.

Youngest Congressional Witness

Esther Zahniser, 10, of Hyattsville, Md., tells Senator Arthur V. Watkins of Utah, left, and Senator Estes Kefauver of Tennessee, chairman of the Senate Judiciary Subcommittee, the reasons that she favors passage of the bill before Congress authorizing President Truman to proclaim 1951 Audubon Centennial Year.

Esther is the daughter of Howard Zahniser, executive secretary of the Wilderness Society, who appeared before the subcommittee to testify on behalf of the Audubon Society of the District of Columbia. She had not expected to be called upon but Senator Kefauver spotted her in the committee room and asked if she wanted to say something about the legislation they were considering. Esther said she had come with her father to get some information for an essay she was writing about Audubon, but that she thought the bill should be passed because Audubon was a very great man and could paint birds better than anyone else.

John H. Baker, president of the National Audubon Society, comparing a print of the belted kingfisher from the Elephant Folio of Audubon's "Birds of America" with the miniature reproduction in the commemorative set of full-color stamps. The set consists of twenty-four miniatures of Audubon paintings.



JOHN BURROUGHS— NEIGHBOR

All photographs courtesy of American Museum of Natural History.

By Leonora Sill Ashton

MUCH has been written about John Burroughs* by those who traveled to visit him at Slabsides and Riverby, near West Park, New York. They have given us interesting memories of this famous man, but to my family, who lived at Hyde Park directly across the Hudson River from West Park, John Burroughs was known as one of the friendly neighbors of everyday life, and that is the way we like best to remember him.

My first sight of Mr. Burroughs was on board the *Robert Main*, a small steamboat which made two trips each day up and down the Hudson River between Rondout, New York and Poughkeepsie.

Standing with my father on the Hyde Park dock, I had watched the puffing little craft stop at the West Park landing across the river, then turn to plow its way across the stream to where we were waiting to climb

* John Burroughs was born at Roxbury, New York on April 3, 1837. He died March 29, 1921 at Kingsville, Ohio, on the train on which he was returning from California to his home in New York State. A few days later, April 3, 1921, on what would have been his 84th birthday, he was buried on the old farm near Roxbury.



"I was absorbed by the face of this stranger with the snowy beard."

aboard. Once on the boat, my father without delay entered into conversation with an old man who was sitting on the deck.

I wish I knew what the two men talked about that afternoon, but I was a child at the time, and I was absorbed by the face of this stranger with the snowy beard. That face was shadowed by an old felt hat pulled forward above the brow, but not far enough to hide a pair of keen, squinting eyes. Why did the stranger squint like that? We were all three on the shady side of the boat and the sky was overcast. There was no glare.

The day was not far distant when I was to learn that the lines in his

brow were caused by those eyes scanning the heights of blazing noonday skies, the depths of woodland thickets, the blinding surfaces of snow and ice, in search of fleeting glimpses of the flash of bright wings through the air, or the long, patient gaze at movements of furtive feathered creatures hovering near their nests and eggs.

"Who was that old man you talked to on the boat?" I asked my father later.

"That was John Burroughs," he replied. "He with John James Audubon and Henry David Thoreau comprise our greatest American naturalists. In years to come, remember you had him for a neighbor."

Following that first sight of our distinguished neighbor I was to see and talk to John Burroughs many times. Often this would be in our study at Hyde Park. Mr. Burroughs always asked to sit in that room when he came to see us. He said he liked to see the books lining the walls. Besides, outside the door on top of one of the vine-hung posts of the study piazza was

a wren's nest. It had been there many years. Peaked with snow in the winter, the birds would come to it every spring. Season after season a brood of nestlings was hatched there, among the purple blooms of the wisteria.

John Burroughs was always interested to hear the tales we young people had to tell him. He was especially pleased one day with a story about the large darning needle from my mother's work basket, which was lost, searched for, and finally discovered clinging to its own thread of cotton which had been neatly woven in and out of the many fibred elements of a Baltimore oriole's nest. The long, shiny thing hung like a pendant from the bottom of the gray pocket swaying on a bough.

He was also pleased with the tale about our watching a honey bee open several blossoms of a closed gentian, disappear in the blue depths one by one and then come out and fly off, leaving the petals open to the sun and sky.

The days of those visits of John Bur-

"We traveled until we came to a break in the woods and there was Slabsides!"



roughs to our house were red letter ones, but the trips we made to see him at Slabsides* held wonder hours for us. The first time we went, he met us at the West Park dock and led us up the now familiar trail to Slabsides. This was during the month of May, and as we started off past Riverby with its vineyards, shad blow was in bloom, white among the still brown trees, and bloodroot and hepatica were flowering on the ground. The way took us over half a mile along a country road. This was followed by a mile of climbing up a rough mountain pathway winding through the trees.

There was only one real pause on that first trail to Slabsides. That was beside a meadow, lying along the road. John Burroughs stood still and pointed to the field. "That is the place where I saw and heard the English skylark," he told us. "Where he went eventually, I do not know, but there he was

one day, a year ago this coming June, soaring up from the grass, singing, singing, as though his throat would burst with happiness."

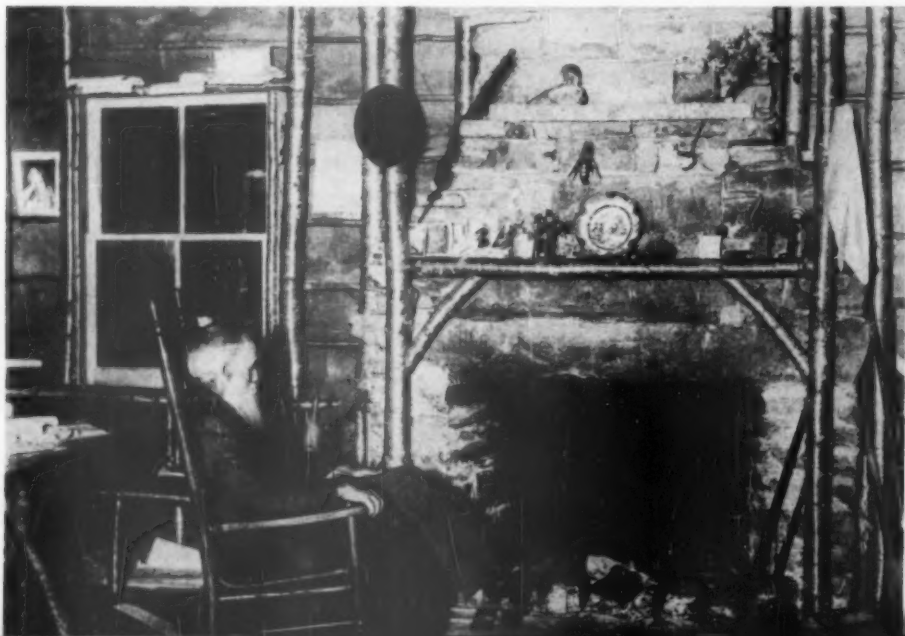
Later we were to learn that a resident of West Park had brought a skylark home from Europe and reared it in captivity. This was doubtless the one John Burroughs saw, but the prosaic explanation of the unexpected appearance of the bird stole nothing from the magic which he brought to the telling of his story. After this, there was little loitering on that climb. Slowly, steadily, we traveled until we came upon a break in the woods, and there it was—*Slabsides!*

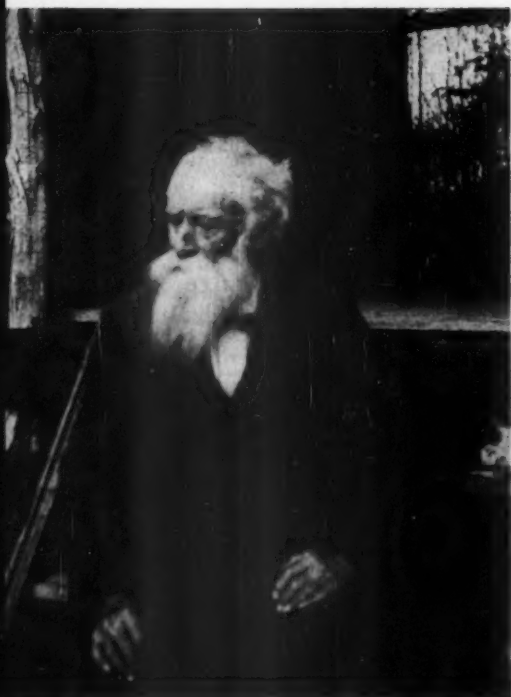
The picture of the comfortable, rustic building as we saw it during its owner's lifetime is still bright in my mind. Also, the rugged cliffs and the hemlock woods which shut it in on one side. What a perfect background that was for the birds as they flitted in and out among the green boughs!

In the preface of John Burroughs' life of Audubon he writes that we

* For a collection of stories about Slabsides, see "The Slabsides Book of John Burroughs," edited by H. A. Haring, Houghton Mifflin Company, Boston, 1931. For John Burroughs' personal accounts of Slabsides, Riverby and Woodchuck Lodge, see his collected nature writings which are available in many local libraries.

"In the Slabsides sitting room we plied John Burroughs with questions."





"He paused on the steps leading to the door of Slabsides."

have had many scientific ornithologists in America but never one who had Audubon's "poetic fervour" in the study of birds.* He apparently did not realize what a close kinship he and the great birdman had in this respect. To John Burroughs, birds were ever the unfailingly changeless objects in a changing world. Friends might move to distant places, he reasoned; events of life move relentlessly on, but year after year, in garden or orchard, one heard the birds of one's youth giving the same calls, singing the same songs.

There were many birds at Slabsides on that day of our first visit. Orioles were singing in the trees, goldfinches called and John Burroughs' own wrens that had a perpetual home on

one of the cedar posts, warbled, and warbled again. A catbird sang nearby, and an indigo bunting just once, flashed his blue wings through the evergreens.

"The birds were not here when I first came," John Burroughs explained. "They followed me here. Birds are sociable beings. They like human companionship as much as they like berries to eat. That is why they flock to gardens where there are flowers, shrubs, vines and—people."

Up the steps to the door of Slabsides he paused, holding the latch string in his hand. Above it, acting as a door knob we saw a gnarled, curiously twisted piece of the root of a tree. "That," he said, "is a queer piece of root that I found when we were digging up stumps for the celery garden. When the girls from Vassar come to see me, I tell them it is the Japanese emblem for 'Slabsides.' And," here he pointed to some unmistakable holes in the slabs surrounding the door, "there is where some woodpeckers have been tapping at my house. They must think they have discovered a new kind of tree where a giant woodpecker has come to live."

In the Slabsides sitting room, familiar to so many visitors, both famed and unknown, my sister and I plied John Burroughs with questions. "Which would he rather write about, literary subjects, or birds and trees and flowers?"

The answer was not long in coming. "If you had asked me which was easier to write about I would have said birds, trees and flowers," he told us. "When I write about the natural world, I know just what I want to say. I see its objects before me, or am able to picture them in my memory. It is not difficult to put my thoughts

* "John James Audubon," by John Burroughs, the Beacon Biographies of Eminent Americans, Small Maynard & Co., Boston, 1902.

about them into words, but when I want to write about the world of literature—even the work of one man—such a vast expanse of material opens in my mind that it bewilders me. I must sift and sort and choose, from the subject matter, what seem the salient facts to deal with before I put pen to paper. But then," he added after an instant's pause, "I never can write about anything, unless the idea of doing so brings a warm feeling around my heart."

He told us many tales of birds and other wildlife around Slabsides in the days that followed that first visit. We heard of the partridge that built her nest in an overgrown path of the woods near the house; of John Burroughs' loneliness on winter days there; of the silence and remoteness which would have weighed heavily upon his sociable nature had it not been for the presence of the winter wren, the juncos and chickadees; of

finding the tracks of quail in the snow, and hearing crows and blue jays screaming in the trees.

We learned that when the winter waned, John Burroughs took trips through the surrounding woods for the express purpose of collecting pieces of dead trees in which woodpeckers had made their nests. Later these were set up in the trees around Slabsides for the wrens and bluebirds to build in.

My sister and I were rabid bird hunters in those days. How we gloated over the lists of those which John Burroughs named as having seen around the cabin in the woods. In June, he told us the ruby-crowned kinglet would come, the purple finch, "one of our finest songsters," the golden-crowned thrush, the wood thrush, the red and white-eyed vireos, the Blackburnian warbler.

The warblers, with the dates of their arrival along the Hudson, were

Birthplace of John Burroughs at Roxbury, New York.



as familiar to John Burroughs as the arrival of robins are to most of us. There was one great quest of his which, up to that time, I don't believe he had ever realized. That was the discovery of a hummingbird's nest—the discovery with his own eyes of one of those miniature circles of fern wool and plant down, shingled with lichens, matching in color the bark of the tree on which it was built.*

One day when we visited Slabsides we found two of these small miracles in the cabin. They had been brought to Mr. Burroughs by friends who had found them and treasured them for him. Of course, they were given a place of high honor on the cabin shelf. I can picture him now as he stood, pointing those two nests out to us, touching them with a gentle finger, and his plaintive voice still seems to

* Editors' Note—In his book, "Wake-Robin," Burroughs says, "The woods hold not such another gem as the nest of the hummingbird. The finding of one is an event to date from. . . I have met with but two, both by chance."

sound in my memory, when he said, "Perhaps I have hunted too hard for them."

One day, out by the cool waters of the spring where miterwort and foam flower were blossoming, John Burroughs cut a willow branch and made whistles for us, conscientiously trying each separate one to see if it would "blow." Then again, he cut penholders from the stems of cat-o-nine-tails, and fitted some of his famous stub pen points—which he used alternately with his quill pen—in the straight line shafts.

Such are the memories—and there are many more—of John Burroughs which emerge from those of our youthful years spent on the banks of the Hudson River. Since leaving our home there, we have often asked ourselves, "How did this busy grape and celery farmer, this essayist of penetrating literary analysis, this composer in poetry, as well as prose, of narrative

Continued on Page 136

The little red schoolhouse which John Burroughs attended near Roxbury, New York.



Audubon Centennial Stamps

From paintings by John James Audubon



LONG-BILLED CURLEW

NATIONAL AUDUBON SOCIETY

"This bird is the largest of the genus in North America. The great length of its bill is sufficient to distinguish it from every other . . . The food of the Long-Billed Curlews consists principally of small crabs called fiddlers, which they seize by running after them, or pulling them out of their burrows." John James Audubon, pp. 36-38, Vol. VI, "The Birds

of America," George R. Lockwood & Son, New York. (In Audubon's time the long-billed curlew was abundant in winter on the coasts of Florida and South Carolina. Once a common migrant in New England, it gradually declined until it is now only a rare straggler on the Atlantic Coast, although it is increasing in South Carolina.—The Editors.)

"On arriving at the Keys of Florida I found the pelicans pretty numerous. They became more abundant the farther south we proceeded, but nowhere so many as at Key West. Scarcely an hour of daylight passed without our having pelicans around us, all engaged at their ordinary occupations, some fishing, some slumbering on the bosom of the ocean, or on the branches of the mangroves. When the weather is calm, they are often seen rising in broad circles, flock after flock, until they attain a height of perhaps a mile, when they gracefully glide for an hour or more, after which they descend and settle on the water . . ." John James Audubon, pp. 192-193, Vol. VII, "The Birds of America," George R. Lockwood & Son, New York.



BROWN PELICAN

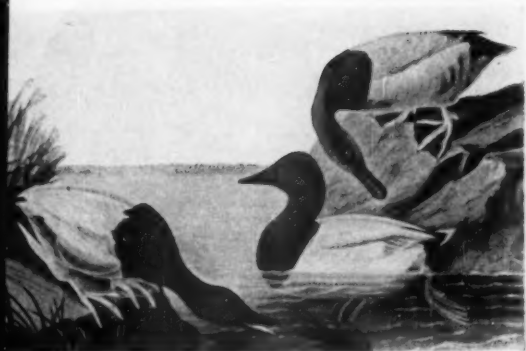
NATIONAL AUDUBON SOCIETY

"Like the domestic Pigeon, they caress each other by billing, in which the bill of the one is introduced transversely into that of the other . . . These preliminary affairs are soon settled and the pigeons commence their nests . . . composed of a few dry twigs, crossing each other. On the same tree from 50 to 100 nests may frequently be seen. The eggs are two . . . broadly elliptical, and pure white. During incubation the male supplies the female with food. Indeed, the tenderness and affection displayed by these birds towards their mates, are striking . . ." John James Audubon, p. 31, Vol. V, "The Birds of America," George R. Lockwood & Son, New York. (The passenger pigeon became extinct as a wild bird about 1898. In the early 1900's, there remained only a small flock in captivity, of which the last one, a female, died in the Cincinnati Zoo in 1914.—The Editors.)



PASSENGER PIGEON

NATIONAL AUDUBON SOCIETY



VASBACK

NATIONAL AUDUBON SOCIETY

"Although at New Orleans, where it goes by the name of *Canard Cheval*, it has been known to the oldest duck-shooters now alive, it is not more than 15 years since it began to rise from a very low price to two dollars a pair, at which it sold during my visit in March 1837. This enhancement of its value I look upon as having arisen from the preference given to it by the epicures . . ." John James Audubon, p. 11, Vol. VII, "The Birds of America," George R. Lockwood & Son, New York.


[Continued from Jan.-Feb. 1951 issue]

KNOW YOUR BINOCULARS



The upper binocular, with individual eyepiece focusing, has calibrations on both the left and right eyepieces. After focusing, note and remember the numerical positions relative to the vertical line on each ocular tube. Keep your binoculars set on these readings to keep in focus for your eyes.

The lower binocular, with its center focusing wheel for both eyepieces, has calibrations on the right eyepiece only.



Your glass—whether you have a \$200 binocular or a \$20 field glass—should be optically clean and, above all, in perfect alignment. Photograph by George Komorowski.

By Robert J. and Elsa Reichert

IT is truly a joy to use a binocular when you can "pick up" a bird quickly, and see colors and details clearly—and without eyestrain. For such vision you must use the glass correctly, it must be the right mechanical type, and above all, it must be in good condition.

Only you can focus the binocular for your own eyes, and you should do so carefully *before* you leave on a bird trip. To focus, you need a printed sign to look at. Select one at least a couple of blocks away. For best results, rest your elbows on something solid, then depending on which mechanical type of binocular you are using, proceed as follows:

INDIVIDUAL EYEPIECE FOCUSING

This type has two calibrated eyepieces that are focused separately. First, turn both eyepieces as far out as they will go. Next put the binocular to your eyes, close your right eye, and look at the sign through the left side,

turning the left eyepiece until you can read the print clearly. Use the same method to focus the right side. Then bend the hinge adjustment until your eyes look through the center of each ocular lens. Note carefully the marking where each eyepiece is set so that, if it is moved, you can put it back in correct position without looking through the binocular.

Your binocular is now correctly focused for the sign, for all objects beyond the sign, and also for objects moderately close to you. How close you can see clearly depends on two factors: *the magnification of the binocular and the condition of your eyes*. The lower the magnification, the closer you can see clearly without changing the setting of the eyepieces. Eyes vary greatly in their ability to see close up, one's age being the chief factor. Your eyes can "accommodate" for near vision; as you grow older your eyes gradually lose this ability. When looking through your binocular at a near object, if it looks blurred, turn the eyepieces, as already described, until you see clearly.

CENTER FOCUSING

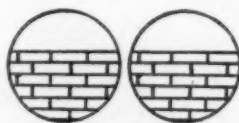
This type has a focusing wheel on the hinge post, and a calibrated right eyepiece. The left eyepiece is not adjustable. First turn the focusing wheel until the bridge supporting the two eyepieces is as far out as it will go, and turn the right eyepiece as far out as possible. Next, put the binocular to your eyes, close your right eye, and look at the sign through the left side turning the center focusing wheel until you can read the print clearly. Then close your left eye, and turn the right eyepiece until you read the print clearly. Bend the hinge adjustment until your eyes look through the center of each ocular lens. Note the marking where the right eyepiece is set, so that if it is moved, you can put it back into correct position without looking through the binocular.

When looking at a near object, if it appears blurred, refocus as follows: keep *both eyes* open, and turn the center focusing wheel until you see the object clearly. Do not move the right eyepiece, as once you have set it correctly, it is correct for all objects, far or near. In fact, if you and you alone are going to use your binocular, it might be a good idea to fasten the right eyepiece in place with a bit of Scotch tape.

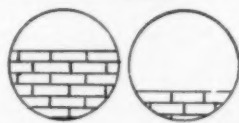
ADVANTAGES OF EACH TYPE OF FOCUSING MECHANISM

INDIVIDUAL FOCUSING

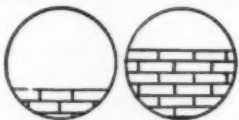
Once you have set the eyepieces correctly for your eyes, they are correct for all reasonable distances—from the far distances to as close as 50 to 30 feet. If you never look at nearer objects, this is the type of focusing mechanism for you. Once you have set the eyepieces, they are set for life, and



When the view seen through the left side of a binocular is the same as the view seen through the right side, the glass is in alignment.



When the view seen through the left side of a binocular is different from the view seen through the right side (see above and below) the glass is out of alignment.



To check your binocular for alignment, look through it at a horizontal building top. Draw the binocular slowly away from you until the ocular lenses are about 10 inches from your eyes. While doing this keep your eyes absolutely rigid, your left eye continuing to stare through the left side, your right eye staring through the right side. You will then see *two separate views*, next to each other, and can compare them.

you can fasten them in place with Scotch tape. If you watch birds as close as 25 or only 15 feet, you will find this type inconvenient. Refocusing each eyepiece separately is slow.

The individual focusing mechanism can be fairly well sealed, so that moisture and dust do not easily get into the binocular. That is why the hunter—who never observes objects closer than 50 feet and values durability—prefers this type. Military binoculars, which must take a heavy beating in all kinds of climate and weather, are always individual focusing.

CENTER FOCUSING

For observing close-up birds as well as those far away, use this type of binocular. Before you leave on a bird trip, make sure the right eyepiece is set correctly; then all you need to do to see birds clearly—whether far or near—is turn the center focusing wheel. Thus you can follow moving birds easily.

How close you can focus your binocular depends on several factors. Generally speaking, you can focus nearer with a low power binocular than with one of higher magnification, but instruments vary considerably. You may even find that one binocular can be focused closer than another glass of the *same model and made in the same factory*. If you have a choice, pick the glass that focuses closer.

As for sealing against moisture and dust, this cannot be done effectively with center focusing construction. The ocular tubes slide up and down, and must necessarily fit fairly loose or they would jam; certainly they cannot be sealed. Any advertisement claiming central focusing glasses to be "sealed" or "waterproofed" is obviously false.

ALIGNMENT

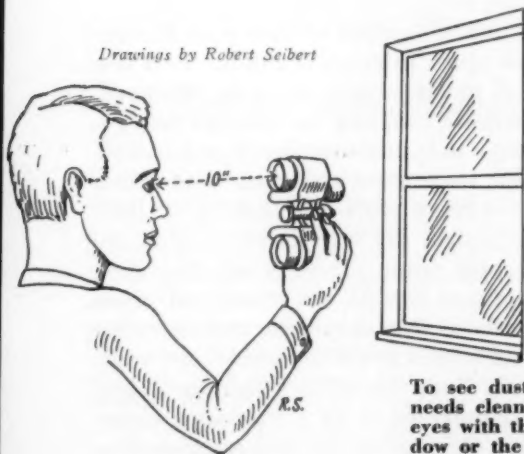
In the focusing instructions above outlined we assumed that if you see clearly through each side of a binocular separately, you can also see clearly through both sides at the same time. This is true *only when the two sides are perfectly aligned*. If the binocular is "out of alignment," one side points at a somewhat different spot than the other. Looking at two different views at the same time puts an unreasonable burden on your eyes. If the difference is great, you will find it impossible—you will not even try—and so will suffer no eyestrain.

But, if the difference is slight, your eyes will attempt to fuse the two different images. This produces various effects. The object you look at may appear blurred. It may appear to flicker, as one or the other eye tires from the strain and stops seeing the object. Eyestrain is certain and a headache may result.

Correct alignment is essential for clear and restful vision, and if your binocular is not easy on your eyes, it should be checked for alignment. If you cannot do this yourself, send it to an organization qualified to check it, and to align it accurately if needed. To achieve precision alignment—whether in factory or repair shop—a special instrument known as a "collimator" must be used and the reason for its use is a curious one.

Bear in mind the hinge adjustment of a binocular. When it is bent closed, the eyepieces are close together, in position for eyes that are close together; when the hinge is wide open, it is set for eyes that are far apart. A binocular should be in correct align-

Drawings by Robert Seibert



To see dust specks or dirt that indicates your binocular needs cleaning, hold it about 10 inches away from your eyes with the ocular lenses away from you towards a window or the sky. Look *into* the binocular not *through* it.

ment for all hinge positions—correct for all eyes. To achieve correct alignment for all hinge positions a precision testing instrument is absolutely necessary. A practiced aligner can easily align a binocular “by eye” alone for any one position of the hinge, but he cannot do so for all positions. To accomplish this he must use a collimator, and it must be properly designed and very accurately built.

Few people realize how many new binoculars are more or less out of alignment when offered for sale. Perhaps the factory collimator was not well designed or not accurately made, or perhaps the aligner was careless. Possibly some optical or mechanical part in the binocular shook loose during shipment, and this caused misalignment. When buying a binocular, check it for alignment if you can; if not, and you have any doubt, have it checked. For to you, as a bird watcher, precision alignment is especially important. You often look through your binocular continuously for long periods at a time; a poorly aligned glass causes eyestrain—*restful vision* is for you indispensable.

Of course, you should make sure your binocular stays in alignment. It should be checked from time to time. When sending it for realignment, make sure the people to whom you send it have a precision collimator.

CLEAN OPTICS

A binocular may be correctly focused for your eyes, and in perfect alignment, and yet may not give you clear vision. The lenses and prisms may have become dirty. You cannot see clearly through a dirty window, which has only two surfaces on which dirt has settled. A binocular has at least 10 glass surfaces (on each side);

if dirt or moisture has settled on them, vision is more or less obscured.

This is easily checked: hold the binocular about 10 inches from your eyes, in reverse position, with the ocular lenses away from you and pointed towards the sky. Look *into* the binocular, *not through it*. You will plainly see any dirt that may be on the inside optical surfaces.

PROPER HANDLING AND CARE CLEANING

Keep your binocular clean. Wipe off any dirt on the metal parts, especially the sliding ocular tubes and adjustable eyepiece, so grit does not get into these moving parts and cause wear. When cleaning the lenses, be careful not to scratch them. Dust particles are harder than a glass surface, and should not be rubbed into it. So, before wiping, *blow off* all the dust you can. For wiping use a perfectly clean linen handkerchief, or a new cleaning tissue; never use either more than once. To remove stains and smears, breathe a film of moisture on the lens; or put a couple of drops of alcohol on the wiper. When your binocular is not in use, keep it in its case away from dust or moisture.

Never attempt to take your binocular apart to clean it inside. This is a job for an expert, properly equipped, because cleaning necessitates realigning. If your binocular is not coated, this is the most economic time—when it is taken apart for cleaning—to have it coated. Be sure, however, that the people doing the work can be relied upon to coat *all* the lenses and prism surfaces that should be processed, for you cannot check the inside ones yourself. Your binocular's increased light transmission from a combined cleaning and coating job will astonish you.

MAINTAINING ALIGNMENT

For a binocular to be in perfect alignment, all the mechanical and optical parts must be in precisely the correct position. The displacement of almost any part, even if only slight, will affect the alignment. Don't bump or jar your glass; never throw it down, even when in its leather case. When you wear it around your neck, keep it from bouncing around. Especially when climbing, it is wise to button your coat or shirt around the binocular, to prevent bumping into rocks or trees. A binocular is a finely adjusted scientific instrument; only if treated as one will it serve you well.

RELATIVE IMPORTANCE

Your binocular can bring the birds up close, and show them distinctly, without being an expensive instrument. You can obtain the magnification you need for general use—6x to 8x—at a moderate price.

With a magnification not over 6x or 7x, you will find the standard field of view ample; in fact, wide field is rarely made for these magnifications. With an 8x, or higher, a field wider than standard is helpful, both for locating the bird quickly, and in keeping it within your vision during flight, but

wide field is expensive. It is a pleasant luxury, but it has no effect on clarity—your prime consideration.

Good light transmission is worth paying for, if you can afford it. It helps you see colors more clearly under dim lighting conditions. You can obtain high light transmission by very big objective lenses, but this means an inconveniently large and bulky binocular. A better way is by objectives of moderate size, and coated lenses and prisms. With coated optics, objectives of 30 mm. to 35mm. will transmit all the light you need for any daytime use. The darker the day, the deeper the shadow on the bird, the more you will appreciate the increased light transmission due to coating. But you can get along quite nicely without coated optics under the usual daylight conditions.

The one indispensable requirement of your glass—whether you have a \$200 prism binocular or a \$20 field glass—is *good condition*. Your glass should be optically clean and, above all, in *perfect alignment*. Only then will it give you the clear and restful vision so essential for happy birding.

(Editors' Note: If you have any questions about binoculars, the authors will be glad to answer your queries, which should be sent to them at Mount Vernon 2, New York.)

Calling All Audubon Junior Club Alumni

We've been wondering where you are—what you are doing—and decided to use this means of sending you our greetings, and asking if you won't write and tell us about yourselves. Are your children now members of JUNIOR CLUBS, and do they enjoy this as much as you did? Maybe you have been instrumental in starting such clubs in your community, or have carried your interest forward into adult nature-study groups. Maybe you have been doing some fine nature photography. Perhaps you have been active in conservation projects.

We've kept in touch with lots of you—Roger Tory Peterson, for instance, needs no introduction in these pages, nor does our own Robert P. Allen of spoonbill and whooping crane fame—but did you know both of them actually started their noted careers in Audubon Junior Clubs 20 or more years ago?

Now we want to hear about you. Won't you drop us a line, and bring us up to date? Just send your letter to AUDUBON JUNIOR CLUB ALUMNI, 1000 Fifth Avenue, New York 28, N. Y.

By J. H. Barrett*

Long before World War II, educators and students in the natural sciences in Great Britain lamented their lack of field centers where students and research workers might study plants and animals in the field. On December 10, 1943, a group of scientists, led by F. H. C. Butler, called a meeting at the British Museum of Natural History to solve this problem. At the meeting a "Council for the Promotion of Field Studies" was formed

* Warden of the Council for the Promotion of Field Studies, in charge of Dale Fort Field Center, Haverfordwest, Pembrokeshire, England.

to expressly provide facilities for field work and to set up field study and research centers throughout Great Britain. Four of these centers now have been established by the Council, each in a distinctly different area. If you are planning to attend Britain's 1951 Festival, the Council especially invites you to visit these laboratories of the out-of-doors and Britain's famed Skokholm Bird Observatory.—The Editors.

In 1851 Victorian Britain was on show in Hyde Park, London. The products and machines of industry were displayed to the world; the first



fruits of the Industrial Revolution could be inspected and the prosperous solidity of Victorian Britain was made evident.

Once again, in May, 1951, the center of the Festival is to be in London. A great site on the south bank of the Thames River has been cleared of war damage and bad buildings and exhibition halls, galleries, quays and

gardens have been designed to take their place. Throughout the country, villages are planning miniature festivals, sports days and pageants. Bright flowers will be grown in the cottage gardens, flagpoles will be newly painted and all strangers will be made welcome. The assistance of every amateur and professional organization in Britain has been enlisted to make the

Photograph of
yellow wagtail
by G. K. Yeates.



Birds and the Festival of Britain



Photograph of Flatford Mill and the Mill House.

"A great variety of birds live within easy reach of the Mill."
 ↓ Nightingale (below) photographed by G. K. Yeates.

Festival a success, and among them, the Council for the Promotion of Field Studies is eager to do its part.

The Council has four field centers functioning, to which visitors are cordially invited. Each of the centers accepts up to 45 students at a time and a student is defined as anybody wishing to know more of the subject that already interests him. Facilities are provided at each center for studying anything that can be studied out-of-doors, not only botany, zoology and geography, but also farming methods, meteorology and archaeology.

FLATFORD MILL FIELD CENTER

Flatford Mill, on the border between Essex and Suffolk, is famous as the home of Constable. The fully-timbered, sixteenth century buildings, one of which is Willie Lott's cottage, appear in many of his pictures.

The countryside around Flatford is unusually diverse. The river Stour, winding and willow-lined above the Mill, broadens into a wide estuary below, its mud flats green with eelgrass at low tide. Salt marshes mark the landward transition towards high

water and the district abounds with lanes and field paths, many of them bordered by thickets and overgrown

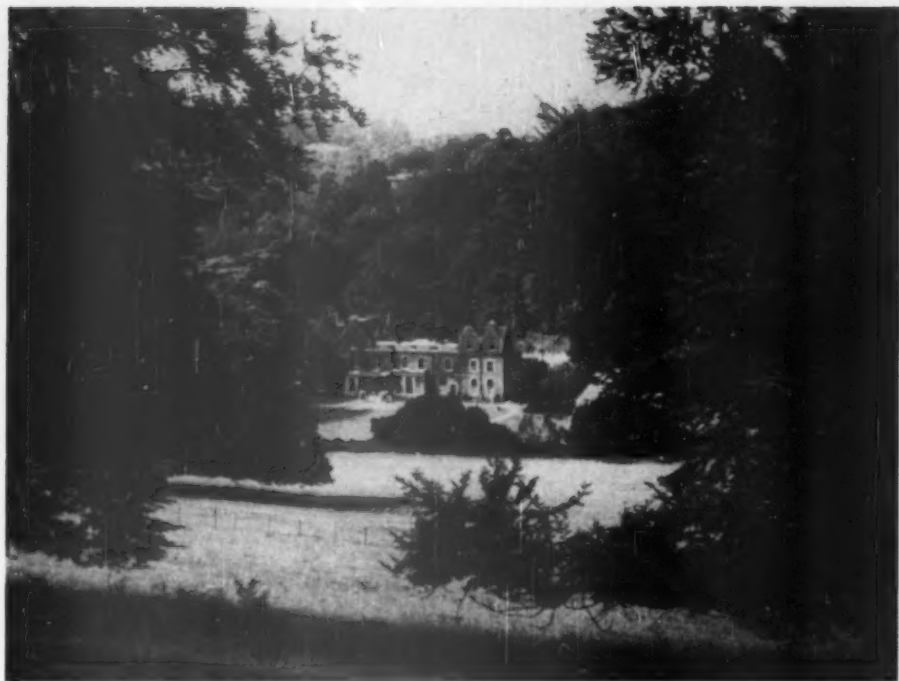




For years, black-headed gulls have bred on the Tarn Moss. Photograph by G. K. Yeates.

Malham Tarn Field Center is on the Yorkshire-Lancashire frontier, in a country of great beauty.





Juniper Hall Field Center, in the valley of the river Mole, is only 20 miles from London.

A field class from Juniper Hall studying the aquatic plants of Holmwood Common Pond. Photograph by G. E. Hutchings.



hedges. There are upland fields and willow-fringed riverside meadows, marshy pastures invaded by rushes and sedges, orchards and arable land, gardens and parkland.

A great variety of birds* live within easy reach of the Mill—jays, magpies, siskins, redpolls, nightingales, black-caps, garden warblers, and reed and sedge warblers. Here one may find pied, gray and yellow wagtails, marsh and long-tailed tits, all three woodpeckers, little, tawny and brown owls, kestrels and sparrow hawks, herons, cormorants, dabchicks, turtle and stock doves and many ducks, gulls and waders, particularly in winter. Many excellent bird places in East Anglia can be reached from Flatford Mill, notably Horsea Island, the Laver de la Haye reservoir and the Walberswick marshes over which passes much of the east coast migration.

MALHAM TARN FIELD CENTER

Malham Tarn Field Center is at the head of Airedale, on the Yorkshire-Lancashire frontier, five miles north-east of Settle. It is a place of great beauty, in country of varying moods and ever-changing lights and colors softened by the woodlands near the house, by the waters of the Tarn, and by the green pastures beyond.

The birds are an interesting mixture of moorland, woodland, marsh and aquatic species. Besides the usual common ones, snipe, redshanks, golden and sometimes ringed plovers, woodcock, curlews, common sandpipers, teal, mallards, pochards and tufted ducks, breed close by. Other breeding birds include the great crest-

*"How to Know British Birds," by Norman H. Joy, Witherby, London, 1936, with black and white sketches, is a practical and helpful book. For serious students, "The Handbook of British Birds," 5 vols., by Jourdain, Ticehurst, and Tucker, published by Witherby, London, is the standard reference.



Warblers find in Surrey Woods conditions that suit them. Photograph of wood warbler by G. K. Yeates.

John Sankey, assistant warden at Juniper Hall, holds a fox and badger cub. Both animals are common in Surrey. Photograph by S. Beanfoy.



ed grebe, dabchicks, redstarts, wheat-eaters, marsh tits, tree pipits, willow, wood and grasshopper warblers. The same three species of wagtails breed here as at Hatford, also the dipper, ring ouzel and grouse. Black-headed gulls have bred on the Tarn Moss for some years. Large numbers of non-breeding gulls roost on the Tarn all summer and huge flocks of curlews congregate near the water in day roosts from July to October.

JUNIPER HALL FIELD CENTER

Juniper Hall Field Center is in entirely different country. Almost in the center of Surrey, in the valley of the river Mole, near the village of Mickleham amidst the chalk hills of the North Downs, it is within three miles of Dorking and Leatherhead and only 20 miles from London.

The birds are largely passerines and most of them are well known. Warblers find in Surrey conditions that suit them as well as anywhere else in Britain. This is the classical locality for nightingales, Dartford warblers, woodlarks and all those pure singers of bridle path and open down. In Surrey the dawn chorus is full choired, "a tapestry translated into sound." Perhaps they are less spectacular, but the birds at Juniper Hall are typical of the great lowland plain of England.

DALE FORT FIELD CENTER

Dale is far away on the extreme tip of the southwest Welsh peninsula. The Fort hangs on the edge of a promontory jutting into the waters of Milford Haven. Dale has intertidal habitats, woods, farmlands, and small marshes. Waders and gulls live side by side here with warblers, and oystercatchers pipe in spring under the

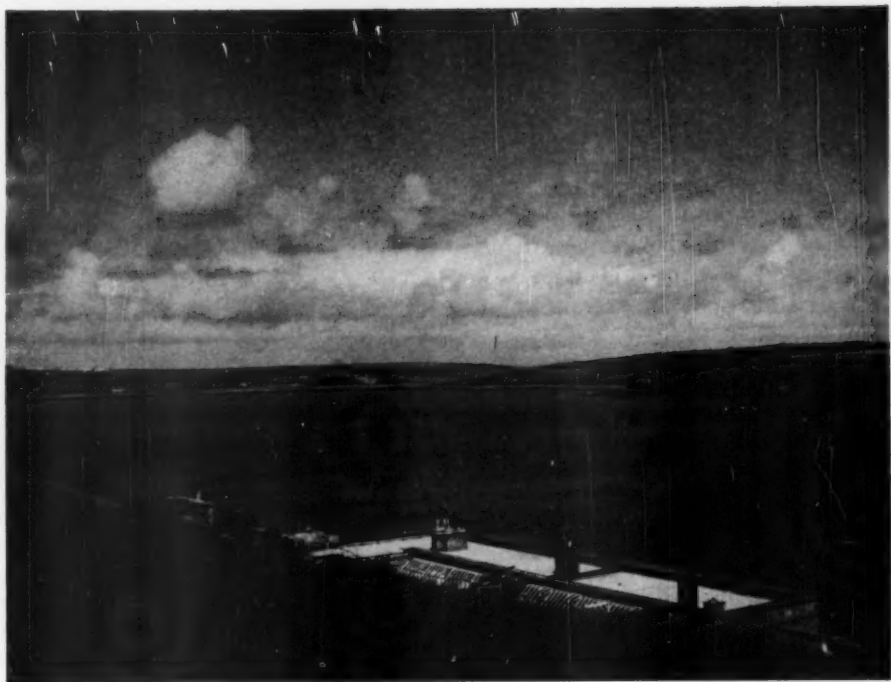
shrubs where sedge warblers will nest in May.

The spring and autumn bird migrations are splendid sights in Dale. The great route down the west coast passes through the parish and many thousands of birds leave land behind at St. Anne's Head. The waders* in mid-May and September fill the Gann estuary with sound and rushing movement—the bar- and the black-tailed godwits, curlews and whimbrels, turnstones, dunlins, sanderlings, common sandpipers, green sandpipers, and ringed and gray plovers move past in numbers and most of these are here throughout the winter. The winter population of ducks begins to collect in late August when the first young widgeons arrive, quickly followed by mallards, teal, shovellers, golden-eyes, scoters and all three sawbills. Gannets fish close to shore in August and cormorants and shags work along the bottoms of the cliffs.

THE SKOKHOLM ISLAND BIRD OBSERVATORY

The ornithological pride of the Council for the Promotion of Field Studies and its great responsibility and privilege, is to administer Skokholm Bird Observatory. On Skokholm Island out in Broad Sound, it is an integral part of the Dale Fort Field Center. Facilities are available for eight workers at a time, either doing their own work or else ready to be made useful by the warden on one of the projects on which the Observatory staff is working. Huge colonies of puffins and shearwaters compete with rabbits for breeding holes; guillemots and razor-bills are on the cliff

* An excellent, pocket-sized field guide to the British sea birds and waders (shore birds) is "Bird Recognition," by James Fisher, Pelican Books, 245 Fifth Ave., New York, N. Y. 65 cents.



Dale Fort Field Center (foreground) is on the extreme tip of the southwest Welsh peninsula.

The waders in mid-May fill the Gann estuary. Photograph of oyster-catchers by G. K. Yeates.



ledges and screes; great black-backed gulls, lesser black-backed, herring gulls and kittiwakes are here, all beautifully divided ecologically, and not apparently competing with each other; storm petrels are in the old stone walls; meadow and rock pipits, wheatears and oyster-catchers all contribute to the total of over 30,000 pairs of birds nesting on the 250 acres of Skokholm Island.

For three years now, work on an ecological survey of the Island has been progressing. Detailed measurement of the composition and distribution of plant societies has led to a basic vegetation map. Specialists have been investigating many groups of plants and animals in an attempt to build up a coherent account of the dynamics of their distribution.

Absorbing as these studies are, pride of place will always be given to the birds. Over 8,000 are ringed* annually, mostly during the migrations. Weights and measurements are regularly noted. A preliminary analysis of the results is under way. The range of species trapped is great, from unusual migrants such as woodchat shrikes, scarlet grosbeaks and aquatic warblers, to the great company of common passage migrants and summer visitors. Large samples of the residents, particularly shearwaters, wheatears and oyster-catchers are color-ringed; information then accumulates on pairing, longevity and dispersal. The opportunities for seeing these birds on Skokholm fully justify the enthusiasm of British ornithologists for the Island. In some ways the Observatory is unique in Europe. It is certainly the ornithological highlight in the Council's organization.

The Council plans to run week-long

* A *ringed* bird is the British term for what Americans call a banded bird.



Peter Ander, warden of Skokholm Island Bird Observatory, holds a banded Manx shearwater.

courses in three of the field centers for visitors to the 1951 Festival of Britain. The courses and their dates are:

<i>Bird Courses</i>		
<i>Dates</i>		<i>Field Center</i>
Jan 8-15	Birds of Milford Haven	Dale
Mar 22-Apr 7	Spring Behavior	Flatford
Apr 18-25	Bird Behavior	Malham
May 9-16	Coastal Birds	Dale
Sept 5-12	How to Identify Birds	Dale
Sept 29-Oct 6	Autumn Behavior	Flatford

<i>Festival of Britain Courses</i>		
<i>Dates</i>		<i>Field Center</i>
May 16-23		Dale
May 26-June 2		Flatford
June 6-13		Dale (coastal scenery)
June 6-13		Malham (plants and birds)
June 16-23		Flatford
July 25-Aug 1		Malham (general nature study)
Aug 8-15		Dale
Aug 25-Sept 1		Flatford
Sept 5-12		Malham (local history)



A wheatear, banded on Skokholm Island, brings food to its nestlings.

Visitors from abroad should not limit their visits to the centers to these dates. All centers are always open to ornithologists and the wardens are ready to assist visitors from overseas.

The best time for bird song and nesting is from May 15 to the end of June. The spring migration is from about April 7 to May 15 and the autumn migration is from September 1 to October 15. No other five places could present a better cross section of British birds and we want to make known to travelers our presence, facilities and readiness to help. The success of the Festival of Britain will depend more upon individual efforts than on the central subsidized display in London. The spirit and plan of the Festival includes every parish and every person. This article is itself a contribution. All Britain will be conscious of the curious eyes looking at her. She may well feel rather self-conscious, but that must never be taken as unwillingness to make good her promises. The particular plans of The Council for the Promotion of Field Studies are now laid. Full details can be had by writing to The Director, 10 Exhibition Road, South Kensington, London, SW7, England.

Skokholm Island (left rear) is a part of the Dale Fort Field Center.



the Audubons should, by a liberal subscription, receive some remuneration for the labors and heavy expenses incurred . . . Of the character of the work, it does not become me to say too much. I will only add that in my department is summed up the result of investigations pursued through a long life . . ."

Life ended differently for these two men, so alike in some ways, so different in others. John Audubon, born in 1785, enjoyed robust health most of his life, and lived much in the open. He died in 1851 at age 66, his mind weakened, his eyesight practically gone.

Audubon's pathetic condition in his last years affected Bachman profoundly. A clot on the brain had robbed Audubon of his speech, and he seemed unable to recognize anyone but his wife. In the spring of 1848, less than three years before the end, Bachman visited him at Minnie's Land. His sorrow at what he found was expressed in a letter to his daughter—

"Audubon has heard his little song sung in French, and has gone to bed. Alas, my poor friend Audubon! The outline of his countenance and his form are there, but his noble mind is all in ruins. I have often, in sadness, contemplated in ruins a home that, in former years, I have seen in order and beauty, but the ruins of a mind once bright and full of imagination, how

much more inexpressibly melancholy and gloomy."

John Bachman was born in 1790, sickly from his youth, obliged to forego college, bothered with eye trouble throughout his life. He died in 1874, at an age of 84, thus surviving his beloved friend Audubon by more than two decades.

Something of melancholy seems to have possessed Bachman in his last years. The crowding upon him of sickness, the death of his daughters and of Audubon, the passing of his second wife, and his own frailty found expression in his words that "Every moment reminds me of the penalty attached to a long life. I have buried my early friends and am left like 'a pelican in the wilderness.'"

Even in the despondency which gripped him at the time, his never-failing interest in nature is evidenced in his comparison of himself with a pelican in the Biblical reference to that bird.

Seldom has the association of two men so firmly joined science and religion. Surely, their enduring alliance illustrates that there was no conflict between them. If the author of the following quotation had known Bachman and Audubon, he might have been thinking of them when he wrote:

"Science without religion is lame; religion without science is blind."

• • •

THE VIRGIN WILDERNESS

The North American wilderness, whether forest or prairie, was unique in being the last of the temperate zone that was virgin. It is that virgin with which we Americans are still in love.—Donald Culross Peattie, "Singing in the Wilderness."

ANIMALS AND PLANTS

Animals are more dependent upon food supply and cover than upon physical factors; hence their most striking relations are with plants.—"Plant Ecology," by Weaver and Clements, McGraw-Hill Book Company, New York, 1938.

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Photo by Raccoon, assistance C. H. Watson

NEWS

OF WILDLIFE AND CONSERVATION

By John H. Baker

President of the National Audubon Society



Condor Prospects Improve

A CONSERVATION victory of very considerable importance, not only from the standpoint of more effective protection for the California condor, but from that of a

precedent that may have wide application on federal lands for the benefit of endangered wildlife, was won when Secretary of the Interior Chapman issued, on January 16, 1951, Public Land Order 695, withdrawing certain lands within the Los Padres National Forest. The full text of the Order is printed on the opposite page.

Briefly, the meaning of the Order is that the 55 sections of land, containing approximately 35,200 acres, are withdrawn from entry under the mining laws: that entry under the provisions of the mineral leasing act is restricted. The U. S. Forest Service will not have power to grant entry, under the Mineral Leasing Act, on the surface of 14 sections, plus four half-sections, of land in one compact tract, constituting the heart of the condors' nesting and roosting area; one in which the geological formation permits relatively easy access by man to and near nesting sites. As far as that tract is concerned, any operations in a search for oil or for gas will have to be carried on outside of the boundaries of the tract, presumably by slant drilling.

In the other 37 sections, plus four half-sections, of the Condor Refuge, oil and gas leases may be granted, with the stipulation that no entry may be made on the surface of any land lying within half a mile of any condor nest, known to have been active within three years, without specific authorization by the Forest Service. This qualification takes care of such situations as the possible location of a condor nest at some distance, though perhaps a little less than half a mile, on the other side of a steep ridge from the desired location of a road or drilling operation. It is recognized that,

where such discretion is given to a governmental agency, severe pressures on its official personnel to grant entry, for this or that reason, are apt to ensue. That is why it is so significant and important that no such authority to authorize entry is granted by the Withdrawal Order as regards the 14 sections, plus four half-sections, in the heart of the Refuge.

Valid existing rights are not affected by the Order. This means that existing mineral leases will run their course, and that complete effectiveness of the Order will not be realized until the last of these existing leases has expired. The area is so relatively unpromising, as regards prospects of finding oil or gas in paying quantities, that it would now appear that the chances are good that there will be no great disturbance through the operations of present lease holders.

The federal bureaus which cooperated in the attainment of issuance of the Withdrawal Order are the Forest Service, the Bureau of Land Management, the Fish and Wildlife Service and the Geological Survey. Naturally, the personnel of the regional office of the Forest Service in San Francisco and that of the Supervisor of the Los Padres National Forest in Santa Barbara were very much involved. The University of California and your Society were especially active and have, as you know, been associated for more than ten years in a joint project designed to find ways and means of better assuring protection of the condors and preventing their extinction. A host of other conservation groups joined in supporting and advocating issuance of the Withdrawal Order, and to all of them we are deeply grateful. Our appreciation should be expressed to the Secretaries of Interior and Agriculture.

It is, perhaps, an interesting sidelight that the provisions of the Order are practically the same as the terms of the agreement of last July, entered into by representatives of the mineral lease holders, the University of California, the Forest Supervisor and your Society, which, however, were not agreed to by the mineral lease

holders, such that a public hearing was subsequently held. It now remains for the Forest Service to effectively apply the powers that have been given it by the Order.

The Forest Service and your Society have

now entered into an agreement to share the cost of maintaining on patrol in the Refuge a special condor warden. Contributions to assist the Society in meeting this cost would be appreciated.

UNITED STATES DEPARTMENT OF THE INTERIOR
CODE OF FEDERAL REGULATIONS
TITLE 43—PUBLIC LANDS: INTERIOR

Chapter I—Bureau of Land Management Appendix—Public Land Orders

Public Land Order 695

CALIFORNIA

WITHDRAWING CERTAIN PUBLIC LANDS WITHIN THE LOS PADRES
NATIONAL FOREST FOR USE AS A CONDOR SANCTUARY

By virtue of the authority vested in the President and pursuant to Executive Order No. 9337 of April 24, 1943, it is ordered as follows:

Subject to valid existing rights and to existing withdrawals for power purposes, all public lands within the following-described areas in the Los Padres National Forest, California, are hereby withdrawn from all forms of appropriation under the public-land laws, including the mining laws, and except as hereinafter provided, the mineral-leasing laws, and reserved as a condor sanctuary, under the jurisdiction of the Forest Service, Department of Agriculture:

San Bernardino Meridian

- T. 5 N., R. 19 W., partly unsurveyed
secs. 1 to 6 inclusive;
secs. 9 to 16 inclusive;
secs. 22 to 27 inclusive;
secs. 34, 35, and 36.
T. 5 N., 20 W., unsurveyed
secs. 1 to 24 inclusive;
secs. 26 to 30 inclusive;
secs. 33, 34, and 35.

The areas described, including both public and non-public lands, aggregate approximately 35,200 acres.

This order shall take precedence over but not otherwise affect the Proclamation

of March 2, 1898, as amended, creating a national forest, so far as such proclamation affects the above-described lands.

The oil and gas deposits in the public lands in the W $\frac{1}{2}$ sec. 3, secs. 4, 9, 10, S $\frac{1}{2}$ sec. 11, S $\frac{1}{2}$ sec. 13, 14, and 15, the E $\frac{1}{2}$ sec. 16, secs. 22 to 27 inclusive, secs. 34, 35, and 36, T. 5 N., R. 19 W., shall be subject to development and extraction under the mineral-leasing laws subject to the condition that no lessee shall use or invade the surface of any such area for any purpose.

The oil and gas deposits in the public lands in the remaining areas of the condor sanctuary shall be subject to development and extraction under the mineral-leasing laws, subject to the condition that no lessee shall use or invade, for any purpose, the surface of any such lands within one-half mile of a condor nest active within 3 years, without specific authorization by the United States Forest Service.

Leases affecting any of the lands shall be subject to any special stipulations found necessary by the Secretary of Agriculture, with the concurrence of the Secretary of Interior, to preserve the usefulness as a condor sanctuary of the lands reserved by this order.

OSCAR L. CHAPMAN

Secretary of the Interior

January 16, 1951.

**Wild
Bird
Plumage**

THE legislative set-up in our country, as regards importation, possession and offering for sale, and sale of wild bird plumage, is not entirely satisfactory.

When the Federal Tariff

Act was amended in 1922 to permit importation of any kind of feathers in unlimited quantity for use in the manufacture of artificial flies used for fishing, and subsequent Treasury Department regulation required simply an affidavit by the importer to the effect that feathers imported under this provision were to be used in the manufacture of artificial flies used for fishing, it was not long before elements of the importing group, interested in sales of feathers for millinery purposes, took advantage of this opportunity to divert substantial quantities of feathers to millinery use. It was also possible, under the phraseology of the Tariff Act and subsequent Treasury regulation, to bring in feathers on affidavits that they came from birds "raised in domesticity" abroad. Much wild bird plumage was imported into this country by taking advantage of these loopholes.

After your Society widely disseminated in-

formation to the public in 1940-41, the great bulk of the feather importers, almost all of whose businesses are located in New York, formed an organization to enter into a joint declaration of policy, which was then translated into a bill which was enacted in 1941 and became law of the State of New York. Its provisions would have brought all possession or offering for sale, and sale of wild bird plumage of any kind to an end in New York as of a certain date, but in 1942 the law was amended to permit possession and offering for sale and sale of any kind of wild bird plumage for use in the manufacture of artificial flies used for fishing. It was pointed out that the Federal Tariff Act permitted such importations.

In 1947 the New York State law was amended to permit possession and offering for sale and sale of the plumage of seven designated species of pheasants, if from birds legally raised in captivity in any state of the U.S. Practically no use of the opportunity afforded by this amendment has since been made because it proved possible, under the provisions of the Federal Tariff Act and Treasury regulations, to illegally import such plumage at far less cost.

In view of all the above, you will readily

STATEMENT OF OBJECTIVES—

We, the undersigned organizations, set forth the following as our common objectives in recommending at this time certain amendments to the Federal Tariff Act and certain changes in Treasury Department regulations in carrying out the provisions of that Act:

1. To eliminate abuses occasioned by the provision in paragraph 1535 which permits importation of feathers for use in the manufacture of artificial flies.

2. To eliminate abuses of the affidavit system (in effect under regulations of the Treasury Department) with relation to importations of feathers for use in the manufacture of artificial flies and of feathers of birds "raised in domesticity".

3. To permit importation under license of a specified annual maximum quantity of two kinds of wild bird plumage that have been customarily used in appreciable volume in the manufacture of artificial flies in the United States; namely, the plumage of the grey junglefowl and the Mandarin duck.

4. To permit importation under license

of a specified annual maximum quantity of the plumage of six specified kinds of wild pheasant; these being six of the seven species of pheasants specified in the 1947 amendment to the New York State Plumage Law as legal to possess for sale, offer for sale and sell in New York State provided said plumage be from birds legally raised in captivity in any state in the United States. These include the three species of pheasants (golden, Lady Amherst and silver) the plumage of which has been customarily used in appreciable volume in the manufacture in this country of artificial flies.

5. To set up a licensing system on the importation, possession and utilization of the plumage of eight species of wild birds above referred to, such that the Secretary of the Interior would possess the licensing power, including that of denying license or permit to import in any year any one or more of the specified items and that of permitting importation of less than the total number of skins or portions of skins specified in the Act as amended if, in his



The New York State law was amended to permit the sale of plumage of seven species of pheasants raised in the United States, but no use was made of this opportunity because it proved possible to illegally import such plumage at far less cost. Photograph of golden pheasant by New York Zoological Society.

understand why the existing situation is not satisfactory to any of the groups primarily interested, and you will be happy to learn that the Izaak Walton League of America, the Associated Fishing Tackle Manufacturers, the Sport Fishing Institute, the Wildlife Management Institute, the National Wildlife Federation,

Feather Industries of America, Inc., and your Society have jointly subscribed to a statement of objectives (printed in full on pages 124 and 125) and have agreed upon the phraseology of a proposed amendment to the Federal Tariff Act. The Honorable John D. Dingell of Michigan, a member of the Ways and Means Committee

judgment, the wild supply of birds of any or all the enumerated species is being seriously reduced by this trade or is, for whatever reason or reasons, threatened with extinction. We recommend that the licensing authority not permit the carrying forward, from year to year, on an accumulative basis, of any unimported balances of any one or all permitted items.

6. To eliminate, through the licensing power of the Secretary of the Interior, the merging or interchange of dealer inventories in feathers for millinery and artificial fly-tying uses without special permission of the licensing authority.

Feather Industries of America, Inc. and the National Audubon Society subscribe to this statement, notwithstanding any provision of their joint declaration of policy dated February 6, 1941 that may be in conflict.

We, the undersigned, agree to stand together on this statement of objectives and that no one or more of the parties hereto will suggest, advocate, recommend or support any change therein or in the

recommended amendments to the Tariff Act, as appended hereto and signed, without prior agreement in writing of all subscribing hereto.

Feather Industries of America, Inc.
by August Bentkamp

National Audubon Society
by John H. Baker

Wildlife Management Institute
by Ira N. Gabrielson

Associated Fishing Tackle Manufacturers
by A. R. Benson

Izaak Walton League of America
by W. B. Holton

National Wildlife Federation
by Carl D. Shoemaker

Sport Fishing Institute
by R. W. Eschmeyer

January 24, 1951

of the House, to which the bill would be referred, has agreed to introduce the bill, a copy of which, less its enacting clause, is printed below.

It is anticipated that the effects of this amendment, if enacted, would be to eliminate the loopholes in the Tariff Act as regards wild bird plumage importation, while at the same time doing away with discriminatory feature, the constitutionality of which might be successfully challenged. The amendment spells out just what are domestic fowl, and in that respect conforms to the present definition thereof in the New York State law. It would make it legal to import, in any one calendar year, not more than certain maximum quantities of the plumage of the five species of wild birds, whose feathers have been used in appreciable quantities in this country, in the manufacture of artificial flies used for fishing. It would make it legal to import for millinery purposes not more than a specified maximum quantity of the plumage of six enumerated species

of pheasants native to China. It lodges licensing power in the Secretary of the Interior and, as a consequence, for practical purposes, in the Fish and Wildlife Service. It gives to the Secretary the power to license importation of less than the maximum quantities specified in the amendment, including no importations at all, when, in his judgment, the wild supply of any one of the enumerated species is reduced or threatened with extinction.

We believe that this proposed amendment to the Federal Tariff Act is a conservation measure of importance; that its enactment would result in elimination of the controversies that have plagued those vitally interested in this matter for some 50 years; that it is fair in its consideration of all parties at interest; that it will ease the problem of gaining uniformity in state wild bird plumage laws and will better protect our own wild birds from destruction for use of their plumage, let alone those of other countries throughout the world.

RECOMMENDED AMENDMENTS TO THE TARIFF ACT

Amend the act of June 17, 1930 (46 Stat. 590: 19 U.S.C. 1001), by deleting the last clause of Paragraph 1535 reading "or to feathers used for the manufacture of such flies," and by inserting in the remaining portion of the proviso between the words "to" and "artificial" the term "fully-manufactured" so that the proviso reads "Provided, That any prohibition of the importation of feathers in this act shall not be construed as applying to fully-manufactured flies used for fishing."

Also amend the first proviso of Paragraph 1518 by striking out at the end thereof the words "ostriches or to the feathers or plumes of domestic fowls of any kind" and by inserting in lieu thereof the following: "domestic chickens (including hens and roosters), turkeys, guinea fowl, geese, ducks, pigeons, ostriches, rheas, English ring-necked pheasants and peafowl (not including those of any wild birds raised in captivity) nor to not more than 5,000 necks or capes of grey jungle-fowl (*Gallus sonneratii*) and 1,000 skins

or parts of skins of mandarin duck (*Dendrocygna galericulata*) for use in the manufacture of artificial flies used for fishing, nor to not more than 45,000 skins or parts of skins, in the aggregate, of Lady Amherst pheasant (*Chrysolophus amherstiae*), golden pheasant (*Chrysolophus pictus*), silver pheasant (*Lophura nycthemera*), Reeves pheasant (*Syrnium reevesii*), blue-eared pheasant (*Crossoptilon auritum*), and brown-eared pheasant (*Crossoptilon mantchuricum*) which may be imported in any one calendar year for millinery purposes and for use in the manufacture of artificial flies used for fishing under permits issued by the Secretary of the Interior, subject to such terms and conditions as may be prescribed by him to insure equitable allocation of the allowed amounts among qualified applicants and that no more than such specified amounts may be imported and used for such purposes, except that the Secretary of the Interior may, in his discretion, reduce or entirely eliminate such import quotas when in his judgment the wild supply of any of these species is reduced or threatened with extinction.

Crane Count

COASTAL Texas has been experiencing this past fall and winter one of the greatest droughts in its history. Naturally this affects the wintering whooping cranes which, in the relative absence of water and normal food supplies on the salt and brackish marsh, tend to forage in the brush and on agricultural lands. After a series of careful counts made from a plane, the Fish and Wildlife Service has reported that there are 32 whooping cranes wintering at or near the Aransas Wildlife Refuge, of which four are young of the year and two are captives—Crip and Jo. This compares with 32 adults and four young a year ago, and reveals a decline in adults, though a satisfactory survival of young to flying maturity in 1950, as compared with such results throughout the past decade. Service officials are of the opinion that their counts may not reflect the total number of whooping cranes in existence on the Texas coast this winter. Since these cranes tend to establish definite wintering territories of some size, it is quite possible that they have found the Refuge crowded this year, under drought conditions, and have sought feeding and watering areas elsewhere which, so far, remain undiscovered.

The single adult which was transferred from the Louisiana marshes to the Aransas Wildlife Refuge last spring, in the hope that it might add to the wild breeding population, recently died. It had appeared healthy, after adjusting itself to its new environment. At the time of its transfer, it was the lone survivor of a wild resident population of this species in the Louisiana marshes. The cause of its recent death could not be determined.

Pinks Are Showing Up

THE holding of the fort by your Society for the protection of the roseate spoonbill in Florida Bay, prior to July 1, 1946, has amply proved its value. After the Fish and Wildlife

Service took over the patrols in 1946 the situation continued to improve. It had a very well qualified man on the job. When the National Park Service later took over the administration of Florida Bay as a part of the Everglades National Park, hunting was banned. Since then the population of the spoonbills has rapidly increased, until now there are reported to be approximately 500 of them in that area, with nest-

ing colonies on quite a few more of the keys than was the case in the early forties. Spoonbills had not been hunted, but there was an end of disturbing them, by nearby hunting of other species, at the very season in November and December when they mate, build nests, lay eggs and hatch young. Birds respond promptly to protection. Now the spoonbills in the Bay are very tame. The other day the Superintendent of the Park came across a tourist with a motion picture camera who was in the act of throwing stones at half a dozen spoonbills, to make them fly! Many more pinks are now showing up regularly at suitable feeding places along the Overseas Highway, from Jewfish Creek to Lower Matecumbe.

"Your Society's holding of the fort for the protection of the roseate spoonbill in Florida Bay, prior to July 1, 1946, has amply proved its value." Photograph of roseate spoonbill by Paul A. Zahl.



Audubon Guide To Bird Attracting

A department in which our readers can share with each other what they have learned about how to attract birds.

Bird Study and Banding At Home

"Bird-banders have added to our knowledge of the migration of birds, their length of life, and domestic relationships." Photograph by Fred Lyon.

By John V. Dennis

SEVERAL generations of American ornithologists have scientifically recorded and described most American birds; their ranges are now well known; and much information is available as to their migrations, nesting habits, courtship and other life history facts. Unless the bird-watcher of today is interested in revising the work of others or in filling in with the life history data about certain birds which is still lacking, he will of necessity seek other unknown things about birds to explore.

A most promising field is one which should particularly appeal to all those who have a backyard bird feeding station and a desire to be on more intimate terms with those birds which make themselves at home there. It is this everyday available knowledge about birds—where they spend the night, when they get up in the morning, how often they eat, drink, sing, sun themselves—that we are especially lacking for many species. Once a thorough study has been made of our common birds, then we are in a position to ask why they act in the way they do.

Already much has been accomplished. Individual species have been studied with great thoroughness, as, for example, the song sparrow which received such detailed attention from Margaret M. Nice.* Bird-banders, particularly,

* See "Studies in the Life History of the Song Sparrow," by Margaret M. Nice, Transactions of the Linnaean Society of New York, American Museum of Natural History, New York City.





"The housewife with a bird feeding station and the businessman who bands birds before and after work, make worth-while contributions." Photograph of banded blue jay by Hugo H. Schroder.

have added to our knowledge concerning both the migrations of birds and the less spectacular daily movements. They have recorded an impressive array of information as to the longevity of birds. In the domestic relationships of birds they have discovered matings between parent and child, brother and sister.

This is the sort of research which does not necessitate a knowledge of bird taxonomy or laboratory techniques. No need for collecting birds or making long expeditions. Field glasses, pencil and notebook are the main tools. These will probably need to be supplemented with banding equipment, and for some studies, bird photography is of great value. But most important is careful observation and attention to detail. The housewife who has a feeding station under observation while washing dishes and the business man who manages to band a few birds before leaving for work in the morning and again after returning late in the afternoon are the sort of people who make worth-while contributions.

Perhaps the most imposing difficulty is that of getting started. I am sure that many people hesitate because they feel that scientific research is a bit awesome, not, say, for a housewife.

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Audubon and most of those whose names we associate with achievements in ornithology were self-taught.

Still to hinder our introduction is the question of a suitable problem for study. We may visualize ourselves as solving a question which has stumped ornithologists for decades. But when we begin to think of all the effort this will involve, we become discouraged and decide that the advancement of science is not for us.

To avoid failure, or discouragement, do not begin with too ambitious a project. Find as simple a bird problem as possible and in time this will lead to bigger things, and you will be better equipped then to make a successful go of it. As a starter I would suggest something as simple as listing the different bird species which visit your feeding station with notes as to the exact time of their arrival in the morning and time of departure later in the day. This would provide an introduction to the daily routine of our local birds, and we would soon be grouping them as "early feeders," "late feeders," "regular visitors," and "sporadic visitors."

Glancing at my notes, I find that the very earliest visitor of the day that I have recorded was the common crow, a bird which I have

BALD EAGLE BILL REINTRODUCED

The bill to extend federal protection to the bald eagle in Alaska has been reintroduced in Congress as HR 1870 by Representative Homer Angell of Oregon.

The Alaska office of the Fish and Wildlife Service reports that bounties were paid, at the rate of two dollars per bird, on 4,320 eagles during the calendar year 1950. This is almost double the total for 1949. It seems apparent that this disgraceful slaughter of our national emblem can only be halted by congressional action, since there seems to be little concern about the situation in Alaska.

The protective legislation, which passed the House at the last session, died in the Senate Committee on Interstate and Foreign Commerce.

The lack of interest in wildlife conservation in Alaska is further evidenced by the action of the Territorial House in recommending a year-round open season on the Kodiak brown bear. Clarence Rhode, Alaska director of the Fish and Wildlife Service, stated that this action, if carried out, would mean extermination of Kodiak Island's famed bears within two or three years.

only seen at the feeding station before breakfast. Two other early feeders are the mourning dove and the ruffed grouse. Mourning doves continue to come at intervals through the day while the ruffed grouse is seldom seen again until dusk. The sparrows are the most constant visitors. Chipping, field, song, tree and white-throated sparrows often continue feeding until it is almost dark. Cardinals are in the habit of making a final visit before they settle down for the night; then it is often so dark that they can barely be distinguished upon the feeder.

To my knowledge no one has mapped the daily routine of the evening grosbeak. For feeding station operators this is the "morning grosbeak," for it is seldom seen at feeders except during the morning. Dr. Lee Whittles, a bird-bander who lives in Glastonbury, Connecticut, has informed me that he has seen them feeding while it was still dark in the morning. He says that they invariably leave by noon, and have been seen on several occasions roosting in maples late in the day.

It is not a fast rule, however, that they always



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(Page 104)

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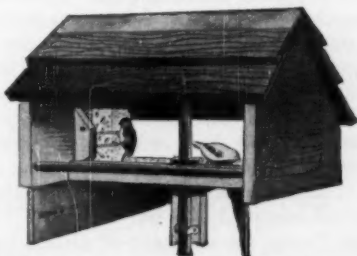
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remain away from the feeding station during the afternoon. Particularly during the spring, when they may be contemplating their return journey to northern nesting grounds, they are apt to make afternoon visits. My latest record is that of two males which came to my feeder at 5:00 p.m. This was on May 7.

Those species which have communal roosts are likely to be the ones to make early departures. Thus starlings, house sparrows, grackles and red-wings, as a rule, leave long before dusk. Goldfinches and chickadees, in my experience, are also among those that leave the feeding tray well before dark, but whether or not these species roost in their own special precincts, I do not know.

I have often attempted to trace the routes taken by departing birds as they leave the feeding trays. I have been able to follow chickadees for a half mile or more, but suddenly the small band disperses and I lose the individuals in the silence of darkening woods. I have been more successful with slate-colored juncos, and have followed their loose flocks in a definite path from the feeding station to a neighbor's blue spruce tree, a quarter of a mile away.

Interestingly enough, both chickadees and juncos, and to a lesser extent other of the birds that visit the feeders, follow the same line of travel through the woods to an open field which they cross by flitting from one lone tree to another. Then they cross a dirt road always at approximately the same point, and fly on through another stretch of woods to the feeding stations. They follow this route at all times of the day so that the feeders are never overly congested. While some of them are at the feeding station, others are traveling along the route or finding food at other points, perhaps along a stone wall or at the edge of the field.

If I were to estimate the number of birds present at my feeders during the winter merely by counting the number seen at any one time, I would be greatly underestimating the total number. For instance, one winter I banded 271 goldfinches, but this probably represented only about half the number coming to the feeders. Yet if I had estimated the number present solely by counting those feeding at the trays at any one time, I would have arrived at a total of around 25 or 30.

From listing the sequence of arrival and departure of birds at the feeding station, we already have gone on to locating roosting sites, following birds in their daily movements and banding birds to determine their numbers. The problem of getting started no longer exists. The

problem now is to find time to explore the fascinating avenues of bird study which are opening up to us.

At this point it might be well to suggest the importance of obtaining a bird-banding permit, for if studies are to be carried out in the way I have suggested, banding becomes almost indispensable. For anyone who has a serious purpose in mind and intends to band birds over a period of many years, the U. S. Fish and Wildlife Service will extend cordial cooperation. Obtaining a permit is somewhat difficult because the government does not grant permits to persons who might quickly lose interest, and they want to be sure that all banding is done by competent and reliable persons.*

It should be emphasized that banding songbirds does not result in many spectacular recoveries of your banded birds. Your birds may turn up occasionally at the station of a fellow bander 15 or 20 miles away, but the chances of any appreciable number being recorded in distant states or foreign countries is remote indeed. I would not advise anyone to go into banding songbirds if this were his sole objective.

Just as intriguing is the banding of birds to solve local problems. The individualizing of birds through colored bands is of the greatest assistance. Also in the sort of problem I have suggested, that of tracing the routes and degree of wandering among wintering birds, banding is most necessary. While banding birds at Moose Hill Sanctuary in Sharon, Massachusetts, I also banded at substations, usually the homes of neighbors who operated bird feeding stations. These were located from a quarter of a mile to several miles away. Of 120 banded chickadees frequenting the home station during the winter of 1947-48, only about a dozen strayed as far as the nearest substation, and none visited substations a mile or more away. Tree sparrows were much more given to wandering. One was banded at a nearby substation on January 12. On January 26 it was taken at the main station and the next day it was back at the substation again.

Banding has shown that tree sparrows as well as many other birds tend to return to the same wintering territory year after year, and often with the same partners. Two tree sparrows banded on the same date in the spring of 1943 at Moose Hill continued to return seasonally. They were last taken together on February 11, 1949.

* Application blanks are obtainable from the Bird-Banding Office, Patuxent Research Refuge, Laurel, Maryland, and in Canada from the Chief, Dominion Wildlife Service, Ottawa, Ontario.

Not only does banding supply us with a wealth of factual information about birds, but it may lead to unexpected lines of research. The bander has the privilege of becoming on more intimate terms with birds than do those who watch birds from a distance. To hold a living bird in one's hand is an illuminating experience. To see the minute details of feathering and to behold the intense vibrant quality of a living bird, its rapidly beating heart and sparkling eyes, is to have a better conception of a bird as a living organism.

To be continued in the May-June issue

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It's hard to say in so many words what makes bird study so deeply appealing. Those of us who have never been anything but confirmed bird watchers do not need to have the mystery explained—we're just glad to have eyes with which to see birds, and ears with which to hear them. But the longer I function as a bird watcher among bird watchers, so to speak, the more I realize the importance of the peculiar joy and satisfaction which derives from working with people whose interests and enthusiasms are similar to mine. One of the grandest things about ornithology is the grandness of some of the people who love and study birds.

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Book Notes

By John K. Terres

A NATURAL HISTORY OF TREES

By Donald Culross Peattie, Houghton Mifflin Company, Boston, Massachusetts, 1950. 6¼ x 9¼ in., 606 pp. Illus. with sketches by Paul Landacre. Includes a key to species and genera, a glossary, and indexes to scientific and common names. \$5.00.

If there is one American writer who is well equipped to tell the romantic stories of our native American trees, it is the author of this volume. Long before he became a writer, Peattie had botanical training at the University of Chicago under Coulter, Asa Gray's greatest student, and Henry Chandler Cowles, a pioneer in the science of plant ecology. Later, in the Gray Herbarium at Harvard College, Peattie studied under Professor Fernald and worked in the U. S. Department of Agriculture for Dr. David Fairchild. In drawing on his botanical knowledge, his deep love for trees, and his ability to write about them movingly and informatively, the author has created an extraordinarily fine book.

The present volume, the first of a series on the trees of North America north of Mexico, treats only the native species and does not include hybrids. It includes all tree species within natural groups, or recognizable climatic associations of trees, from Hudson's Bay and Newfoundland to the northeastern United States, south, in the Appalachian Mountains, to Georgia, and west to the Dakotas and Nebraska. Subsequent volumes will deal with western and southern groups of trees and with introduced species not native to North America.

Notes on the names of trees and their distribution precede the main body of the book followed by an individual discussion of each species, of which a total of 177 kinds of trees is included. The common and scientific names of each tree species is followed by a description of its range and details of leaves, flowers, seeds, bark, wood and other differentiating characters.

It is in the main body of the text about each species that the author tells some of the fas-

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cinating stories of trees, how certain individuals have survived from colonial times, their original sizes in the primeval forest, their uses to mankind, and how the present day forest and its tree descendants compare with our great forests of yesterday. In his foreword, the author says that almost every kind of tree in America has made history, entered into our folkways, or has usefully become a part of our daily lives. To tell of these little things, to help the reader identify trees, and to invite him to go out and explore the woods is the purpose of this book.

A LABORATORY AND FIELD MANUAL OF ORNITHOLOGY

By Olin Sewall Pettingill, Jr., Burgess Publishing Company, 426 South Sixth Street, Minneapolis 15, Minn., 1948. 8¼ x 10¾ in., ring-bound, cardboard covers, 248 pp. Illus. with black and white sketches by Walter J. Breckenridge. \$3.50.

The author, a well-known ornithologist, developed his manual from experience in teaching ornithology at Carleton College, Minnesota and at the University of Michigan Biological Station. Originally mimeographed, the present edition is photo offset, with some sections revised and new sections added. Designed primarily for students in colleges and universities, this manual offers an outline course in ornithology that anyone with a desire to learn the science of birds might use successfully.

The manual is divided into 18 sections, covering subjects from bird feathers, internal anatomy and laboratory identification of birds to bird ecology, field identification, bird communities, mating and nest building, and other activities of birds. There is a large section on bird populations and appendices which include bird photography, bird banding, collecting birds, preparing specimens, the preparation of a scientific paper and excellent bibliographies of important bird books and ornithological journals.

One of the particular values of this manual is its sectionalized treatment of the many branches of bird study, each of which might absorb one for a lifetime. Although sections, with lists of reading references, are presented in the order in which ornithology might be taught in the classroom, the reader is free to choose the section that interests him most and concentrate upon it to the exclusion of others. For teachers and others who might like to start a course in ornithology, the manual will be highly useful. For those who think they are too old for college, or haven't time for



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WHERE TO FIND BIRDS IN MINNESOTA

Compiled by Kenneth D. Morrison and Josephine Daneman Herz, *The Webb Publishing Company*, St. Paul, Minnesota, 1950. 5 x 7½ in., cardboard covers, ring-binding, 122 pp. Bird illustrations by Roger Tory Peterson. Indexed. \$1.50.

This handy pocket-size book is the result of a cooperative venture undertaken by 48 Minne-

sota birders, including the compilers. On the map of Minnesota at the front of the book, the state has been divided into four geographical birding sections—southeast, southwest, northeast and northwest.

Each birding area discussed is clearly marked on the map; sections are treated individually; and explicit directions are given for reaching each birding area, with a seasonal list of the birds that have been seen there. Useful notes on topography, vegetation, hazards, unusual bird records, vantage points, restrictions, if any, and general comments about each area help to make this book highly desirable for successful birding in Minnesota.

JOHN BURROUGHS—NEIGHBOR—Continued from Page 101

gems of the American countryside, find time to spend hours and days as the ungrudging host of all those who came to visit him?"

The answer to the question might be that, like the birds he loved, John Burroughs was intrinsically sociable, but we believe the reason lies deeper.

In one of his "Journals" Thoreau writes that in the spring of the year the note of the meadowlark leaks up from the field as if "its bill had been thawed by the warm sun." From

a long acquaintance with John Burroughs it appears to us that his entire intercourse with people was that of a man in whom the frozen, restrictive attributes, common to a greater or less degree in the minds of humans, had been thawed away in the warmth of intense friendly interest in his fellow beings, a warmth which flowed forth as freely and spontaneously as that from the sunlight itself. This is the picture our family holds in its memory of our one-time neighbor, John Burroughs.

LETTERS—Continued from Page 72

Also in this four-day trip, I did not see one immature eagle. In 1946 and 1947 I saw as many as 12 standing in one small area.

There are just too many people moving into Florida—the coast is soon going to be one long village. I am amazed at the change each year. In five or six years there may not be a dozen nests in a 100-mile coastline.

The birds are gradually moving out and I think the movement is southward rather than to the north, as I am hearing of more nests than formerly south of Fort Myers. Possibly the Everglades National Park, recently established in southern Florida, may absorb evicted populations of the Florida bald eagle.

I think the hurricane of mid-October 1950 is one factor in the birds not nesting. The storm

of October 18-19, 1944 completely disrupted the 1944-5 nesting season, even though the birds do not lay until mid-November. You may think this strange but I am positive it is a factor.

At this time, the whole situation in Florida looks very discouraging. Up to last March a splendid stand of immense pines, covering some 3,000 acres for five miles along the gulf from Sarasota up towards Bradenton, was the remaining haven for nesting bald eagles on the West Coast. Yesterday, I found that two saw-mills in this area had cut off all the timber. They did leave three eagle trees, but the birds were so disturbed by the timber-cutting that they did not nest.

CHARLES L. BROLEY

Tampa, Florida
January 22, 1951

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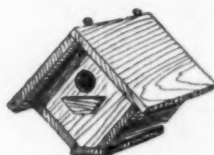


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At left, a rustic home for such woodland birds as chickadees and nuthatches.

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Shown at left. Rustic home of hemlock and cypress. Size 7 1/2 inches. Easily cleaned by removing bottom strip \$1.55

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